

76.0

A

DISCOURSE  
CONCERNING  
F E V E R S.  
I N  
T W O L E T T E R S

To a Young PHYSICIAN.

THE FIRST,

Diffuading from all *Hypotheses* and *Theories*,  
whether *Physical* or *Mechanical*, as vain  
and delusive. *Dan. Turner.*

THE SECOND,

Directing his *Regimen* for the Cure, and his Con-  
duct to the sick Person;

With some short, but general Remarks upon the *Pulse*  
and *Urine*, in the Way of Postscript. As also upon  
the *Crises*, and *critical Days* in Fevers.

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*Neque enim erubescendum est, si haud semper liceat, qua rati-  
one, Morbos aut gignat aut abigat natura, suspicari: Sal-  
tem honestius est nos aliquid nescire nos confiteri, quam tan-  
dem in opinione fictâ atque vanâ convictos, turpiter eru-  
bescere.*

*Freind's Com. de Febris.*

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L O N D O N:

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## ADVERTISEMENT.

**T**HE following Letters, first written to a young Physician, who had desir'd the Author's Thoughts about this Subject of *Fevers*, together with those of some modern Writers, drawn up in such manner, as might be proper for his own Information, falling into a third hand, a hasty transcript was made thereof, with design of conveying the same to the Press: of which being inform'd, to prevent a maimed Copy coming out, he promis'd to revise them at his leisure, and having made such addition and alteration as might render them more useful, consent also (if thought necessary) to their publication.

If any Gentleman should think himself wrong'd, in that his opinion is ex-

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pos'd, it must be without cause ; since he has avoided meddling with any one's private Sentiments, and brought nothing upon the Stage, that has not been openly avow'd, or divulg'd in print. It is surely every Man's duty to stand on the side of Truth, at least what he thinks such, (*Amicus Socrates, Amicus Plato, &c.*) as well as to caution against Error, especially where Life may be thereby endanger'd ; and provided this is done without personal Reflection, no Man can justly or reasonably complain.

As it was another part of the Author's Design, to inform this young Gentleman's Mind, as to his moral Conversation ; so if in exposing the Immoralities of others, who are still nameless, the better to draw him off from ill Examples, the Persons reflected on should think themselves ill treated, this also would be as groundless, because he points out no particular Person ; but if those who are really meant, make no scruple thus to publish their shame, why should they think



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think it strange that others should observe them? or that the Age, loose as it is, should resent such unseemly behaviour in a sick Man's Chamber, of which no one can be guilty, who has not surely first shook hands with his *Reason*, how wise soever he may seem in his own conceit, as well as his *Religion*, if ever he had any?

It may be farther necessary, he should make Apology for so rigidly opposing the Method of late introduced, of Practice by *mechanic Theorems*, or taking physical Indications thence; as if a Man could not be an able *Physician*, unless first an *Algebraist*, and capable of reducing *physical Quantities* and *Numbers* in the body of Man, to a *mathematical* Standard: Indeed the many foul and fatal Errors he has seen committed, particularly in the business of *Evacuations*, more especially about the Problem of *diminishing one Secretion by the increase of another*, and *vice versa*, by some too opinionated Men in this way, has made him more



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wary of pursuing this Course farther than Observation in the like Cases, or a well grounded Experience, will justify the same; and he hopes the pardon of these Gentlemen of this *exalted Genius*, if he is so unhappy to differ from them, in believing that these two will be always the safest Guides to the practical Physician.



THE

THE  
FIRST LETTER  
TO A

YOUNG PHYSICIAN,  
Dissuading Him from all *Hypotheses*  
and *Theories*, either *Physical* or  
*Mechanical*, as vain and delu-  
sive.

S I R,

**I**T may perhaps seem strange to some,  
if not to you, that any Person's  
Thoughts, and much less mine, should  
be still wanting, or thought necessary  
upon a Disease so raging for thousands  
of Years past, and after so many abler

Pens employed thereon; a Disease which our *Sydenham*<sup>a</sup> has remark'd, takes up at least two thirds of the whole Tribe, and often carries away more People than all the rest. A Disease so common and withal so fatal in the days of *Hippocrates*, that out of forty two he gives us an account of, he had the misfortune of losing twenty five<sup>b</sup>; and yet, as you have sometimes justly remark'd in private Conversation, who ever looks over the large number of Volumes written upon this Subject, might be induced to believe that the Authors had thought very little more than to dress up an *Hypothesis*; or furnish out some *Theory*: especially our late ones, not dictated so much by *Nature* as their own Fancies. How else, surely, is it come to pass, that whilst she is still the same in all Countries and Climates, and has been, if not before, at least from the beginning of the *Post-diluvian*

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<sup>a</sup> In his Epistle to Dr. Cole. <sup>b</sup> As Dr. Freind has observ'd in his *Côm. de Feb.*

World;



Let. I. *Concerning* FEVERS.

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World; yet with respect to our Writers in *Physick*, particularly about *Fevers*, we have almost as many Minds as Men, as well in regard to the *Cause*, as the *Cure* thereof.

It has been said by some, there is less Wonder we have made so small Improvement in the Knowledge both of this and others, since we forsook our antient Guides, and set up for new Discoveries, and *hypothetical* Advances: Among whom I find it the complaint of *Rhazes* the *Arabian*, as a late Writer takes notice, thus,

‘ The Authors who have improv’d this Art, are not a few, nor to be comprehended within the compass of a few Years: A thousand Writers, perhaps for a thousand Years, have been improving the same; and he that industriously studies those Authors, will, in the short period of life, find out as much as if he had liv’d a thousand Years himself, or employ’d those thousand Years in the same Study of *Physick*: But if the perur-

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*Freind* in his History of *Physick*, Vol. II.

‘ fal



' fal of antient Authors comes once to  
 ' be flihted, what can any fingle Per-  
 ' fon find out? or what proportion can  
 ' his personal Abilities, tho' much fupе-  
 ' rior to others, bear to the immense  
 ' Treasure of the Antients? In fhort, he  
 ' that reads not the Books of the antient  
 ' Physicians, nor underftands fomething  
 ' of the nature of Difeaſes, even before  
 ' he comes to viſit, will, when he attends  
 ' the ſick, either through Ignorance or  
 ' Miſtake, overlook the Difeaſe, becauſe  
 ' he does not beforehand underſtand any  
 ' thing of it.'

In the latter part of our Author's Af-  
 ſertion, he is ſurely right; but the Query  
 now will be, whether this Difeaſe is ſo  
 well underſtood, by reading either the  
 antient or modern Authors, as from our  
 daily converſation with the ſick, and heed-  
 fully obſerving how Nature works her  
 own deliverance, when left to her ſelf  
 at any time under like condition? from  
 whence we may be after, the better en-  
 abled to aſſiſt her by the means of Art.

And

Let. I. *Concerning* FEVERS.

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And of this Mind surely was the same Countryman *Avenzoar*, who tells us,  
'<sup>d</sup> that albeit he had a liberal Education,  
' That he had learn'd not only what belong'd to a Physician, but out of a  
' great desire of Knowledge, every thing  
' that was related either to *Pharmacy* or  
' *Surgery*; notwithstanding which he lays  
' it down as a Maxim, that *Experience*  
' is the right Guide and Standard of a warrantable Practice, and must absolve or  
' condemn us in this Life and the next :  
' Observing farther, that the Art of curing  
' is so little to be obtain'd by *logical* Distinctions, or *sophistical* Subtilities, that  
' long Use, assisted by a good Judgment,  
' can only furnish this extraordinary Talent.  
'

But as on the one side we are told, our Neglect of the Antients, and Contempt of their Labours, has contributed to the small Progress we have made in the healing Faculty : So on the other, we have been

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<sup>d</sup> *Freind* in his History of Physick, Vol. II.

charged with Bigotry to their Opinions, and yielding a kind of implicit Faith to their Traditions; whence farther Improvements have escaped us, and new Discoveries have been prevented, for fear of clashing with the antient Sages.

Thus it seems, between the too great Neglect, and over-bearing Fondness of Antiquity, do we stand culpable in the opinion of either Party; But indeed, when we consider the Method since the time almost of *Hippocrates*, in which more particularly the nature of *Fevers* has been handled; how little Profit is to be reaped by the young Practitioner from hence, I might say rather what Disadvantage, I need not, I am sure, acquaint you, who are already well apprised thereof; and whom I have heard lament with another of the same Profession, \* that even among the multitude of Remedies, we had almost lost the Art of curing: Or that notwithstanding we abounded with *Systems*,

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\* Editor novæ Editionis Lommii de Feb. in ejusdem Præfatione.



*Practices, States and Histories* of Physick, for the most part, set forth by those who have been little conversant therein; yet are we in a manner destitute of the most useful, *viz.* the *Histories of Diseases*, like *Sydenham's*, copied after *Nature*, or impartial Registers of Practice laid down with such just and adequate Rules, as are necessary for steering safely the *medical Compass*, divested of *Hypothesis, Theory, or Speculation*.

We have one *Freind*, 'tis true, among a whole *College of Physicians*, who has taken much Pains this way; and to whom we are therefore as much indebted; but what is this among the great number of learned Men, who are truly qualified farther to improve this Art by their Observations, yet choose to remain silent? What the *Bard* has done being confessedly rather for the use of the Ladies in the Country, than the Practitioner here in Town: And truly had the venerable old Gentleman saved himself the Pains of his late Performances, it  
had



had been possibly more for his Reputation: Since every one knows, whilst another turn was to be served, there was no Man ran farther upon the Pomp of Medicine, or made it more a Mystery than himself: And that end being answered, to expose the same now at last to the common People, what is this but like another C——r, S——n, or Q——cy, to set up a Physician in every Family, or to make every one his own? by which more People have been ruined and undone, through Mistake in the case, an ill timed Administration of a good Medicine, or some other Over-sight, than would by all their Diseases, had they been left only to Nature,

But to instance now in some of these *hypothetical* Writers, I will begin with a certain *Physick Professor*<sup>f</sup> well known to us both, who has in a manner discharged the last Stages of the Blood, of any thing inimical to our bodies, and

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<sup>f</sup> Dr. W——d in his State of Physick and Diseases,

divested

divested the same, together with the Juices  
 thence secreted, excepting the *bilious*,  
 of any noxious qualities, whilst the seat of  
 the Disease, whether *acute* or *chronical*,  
 is placed in the *Alimental Ductus*, or  
 the *Primæ Viæ*, by which are under-  
 stood the Stomach and Guts; whence o-  
 ther Remedies, how potent so ever, and  
 which have been found useful to subju-  
 gate the same, are hereby in a manner  
 cashier'd; and such only as operate on  
 these first Passages, that is *Vomits* and  
*Purges*, are entertained: to prepare the  
 way for this very singular *Regimen*  
 you have heard farther that *Oils* are to  
 be administred, with a view of sheathing  
 the parts from the depredations of these  
*bilious Salts*, as well as fitting them for  
 expulsion by the *ævo nat. viæ Cathart.*

Thus has this learned Gentleman and  
 great *Naturalist* prevailed with many, even  
 of the Female Sex, to run this *vomiting*,  
*clystering* and *purging Gantlet* daily, or  
 each other day, for six weeks or two  
 months successively, to get rid of a sup-  
 posed

posed *Aq. Fortis* in their Stomachs; giving rise to some Complaint, how distant soever from the same. A *Vomit* over night, a *Purge* next morning, with an *oily Clyster* three or four hours after. Next day an *oily Draught*, or a *Vomit*. The day following a *Purge* and an *oily Clyster*; and so *de Die in Diem*, till the sick Man grows tired, or being quite spent, is forced to give over.

And this Method I have heard also has been pursued, without regard to the already over relaxed Fibres of the *Ventricle* and *Intestines*, the slimy *Saburra* on the plushy Coat of the same, or phlegmatic Infarctions of their Glands; much better removed by *Vomits* (where such are wanting) of another kind. The *Idiosyncrasia*, *Nausea*, *Anorexy*, *Dyspepsy* or *Apepsy* after once emptying the same Passages, requiring a different Management, as by the *Amaro-aromatica chalybiata & corroborantia*: But such is the Persuasion of the Doctor, be the Disease where-ever, the Source is here, and accordingly



accordingly down goes the *Oyl*, to blunt the offending *Salts*, then the *Vomit* to discharge them: But this not sufficing, next day a *Purge*, and up must go the *Clyster*, to fetch off what was got too far out of the reach of the preceding Vomit.

It were needless to give a Catalogue of Distempers that are thus to be vanquished according to this Author, since all are concluded under the same; nor need I re-mind you of a Person who told us he had taken several Quarts of *Oyl*, two Dozen of *Clysters*, with a like number of *Purges*, in less than six Weeks time, to get rid of an *ischiadick* Distemper, which still continuing, was after removed by an *Epispastic* applied upon the pained place, without a Grain of Physick of any sort; nor have I leisure to acquaint you how vain and fruitless the same Course has been to many others whose Stomachs (some) have been thereby so nauseated, that neither Physick nor Food, for a long time after,

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could



could be retained; the very sight of the *Oyl* having set some tender Stomachs upon retching, as that of the *Clyster-pipe* has been ready to do others, upon the double Operation; of which my self was once a Witness.

But it were surely paying too great regard to a whimsical Opinion, to enlarge further thereon; especially since the same has been long since animadverted, in a Discourse by way of <sup>s</sup> Answer to what the Doctor has made publick in relation thereunto.

The next I shall observe under the same *Class*, shall be that of another very singular Man, <sup>h</sup> who at his first setting out was resolved to be taken notice of, for Novelty likewise of Opinion, which was, that our Stomachs could never abound with too much *Acid*; and that the contrary Quality, *viz.* the *Alkaline*, was the Root of Dis-

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<sup>s</sup> Q——y's Remarks upon W——d's State of Physick.

<sup>h</sup> Dr. C——b.

eases, as well Fevers as others: Hence the *Orange* and *Vinegar* Merchants Interests were to be promoted: The *Spirit* of *Sulphur*, and *Vitriol*, the *Cream*, *Chrystals*, and *Vitriolate Tartar*, were like *Salt*, to season all Things, and *Pickles* the only Condiments to our Foods. These were to take off the Effervescence of the Blood in feverish Ebullitions thereof, to incide the viscous Humour, drain away all tartarous scorbutick Salts by the Kidnies, fortify the Stomach, promote Digestion, brace up the relaxed Tone of the same part, excite Hunger; in a Word, to allay all preternatural Ferments, arising by means of *alkalious* Salts: So that in short I know no Man to whom the following Remark of Dr. *Freind* is more applicable than to this Author, who having observed the Mischief of a *hot Regimen* in Fevers, delivers himself thus, on the opposite Side: *Est & alia huic diversa Insania, quam insaniunt nonnulli quorum in Acidis, posita est omnis curatio:*

*Quique spem nullam nisi in Aceto, aut pomorum agrestium succo collocant, quasi quia Metus sit agrotum comburere, ideo protinus frigore enecare oporteat.*<sup>i</sup>

Of a contrary Opinion to this, was one perhaps of as sour a Temper,<sup>k</sup> however a more fortunate Practitioner, the wealthy *Alkalinus*, who seem'd, upon a much more reasonable Foundation, to have taken up a quite different Persuasion, that an *Acid* was the chief Enemy to our *English* Constitutions, and woven, as it were, in a greater or less Degree with most of our Diseases: Wherefore it was rare to find a Prescript of this Gentleman's without one or more of the *Testacea* or absorbent Powders, to conflict with this *Acidity*, if not in the Blood, in the Juices of the Stomach and Guts.

That such an Humour does predominate in these Parts, even of Infants and young Children, we need surely no

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<sup>i</sup> Comment. de Feb.

<sup>k</sup> Dr. R——fe.



other proof than the curdled Milk thrown up in vomiting, or those gripy Stools, as the good Women call them, so frequently ensuing; that an *acid* Effervescence is the cause also of the convulsive *Tormina* of these little ones, is as evident, from the same yielding to these *alkaline* Remedies, as to a Charm; that the like gives rise to the Complaint at the Mouth of the Stomach, or upper part of the *Oesophagus*, by the *Greeks* named καρδιαλγία, also καρδιαγμός, by our People the *Heart-burn*, is as manifest from its removal the same way.

Again, that such *Acid*, encountering with other Juices, keeps up a *Luētus* in the Blood of *hectical*, and some of the *scorbutick* Patients, producing those *colliquative* Sweats and Fluxes which often attend them, is farther apparent from so many of their Recoveries, when timely enterprized, by means of the *Ass's* Milk, and the plentiful use of the said Powders. Lastly, that this *Acid* is so fatal to others, appears also from the

four Eructations, curdly Vomitings, and Gripes with Looseness, when the *Milk Diet*, upon this Occasion, is forced to be laid aside, and the *Testacea* continued; altho' with some other Vehicle, such as the temperating Decoctions of *China*, *Sarsa*, *Eryngo*, or the *Decoctum Album*.

No wonder then this very successful Physician, having found by Experience that nothing came up to these, was so very fond of them, as to make them almost the whole of his *Materia Medica*; insomuch that one of his Creatures, who had raised an Estate under him, has been often heard to say, that *Alkalinus*, to his Knowledge, had acquired above fifty Thousand Pounds by the Powders of *Crabs Eyes*, *Pearl*, *Coral*, and the *Crabs Claws*.

I must own to you, my Friend, that taking this Gentleman for a Guide at my first setting out, I had formerly free access to his *File*, and have looked over many Thousands of his *Formule*, where,  
however

however Cases might vary, the *Testacea* seemed the *Sheet Anchor*, although directed in diverse Forms, both in *acute* as well as *chronick* Sicknesses. He dealt much indeed in *Mineral Waters*, sometimes for *Vehicles*, to wash the others down: But neither will I detain you longer with the Management of this great Practitioner, *great* indeed, on the account of a vast Estate he had acquir'd by a fortunate Practice; yet how far excelling others, in good Literature, good Breeding, or good Usage of the rest of the Faculty, or those related to it, I shall not take upon me to determine; leaving that to others, who were better acquainted with him.

Whilst quitting him, the next under the same Tribe, I mean the *hypothetical*, I shall observe, is one, who I fear did more Mischief than any, if not all the other; I mean *Pyrophilus* or *Philopyrus*,<sup>1</sup> who had taken up a Belief that

<sup>1</sup> Dr. M——n vid. Pyretologia sive Tract. Ejus de Feb.



there was a kind of *Venom* or poisonous Ferment, which at these times had seized on the animal Spirits, and consequently that the true and radical Cure of *Fevers*, consisted in the exhibiting such *Antidotes*, as were fit to encounter and subdue the same: such chiefly were the *Theriaca* Compositions, the Confect. of *Mithri-date*, the *Elect. ex Ovo*. the *Rad. Serpentar. Contrayerva*; and the like: These, all under the Name of *Alexipharmicks*, were called in, unless the Disease began to remit, and then the sole Antidote was the *Cortex*; as at once extinguishing the *Ferment*, and overcoming the Disease, if the Patient was not destroy'd by the same, or the Remedy.

You are to understand, Sir, by the way, that these *venene ferments*, thus implicating themselves with the animal Spirits (which our Author here displays, defines their Nature and Properties, as things self evident) and constituting the different Species of *Fevers*, differ only among themselves in *Degrees* thereof.

Thus

Thus if the *Venom* which has seiz'd them, be of a mild Nature, and they in good Heart, or Condition, they may possibly get the mastery in twenty four Hours, altho', perhaps, the same Ferment may muster up fresh Force at certain stated periods: Whence the Rise of *Intermitting Fevers*.

From the next Degree thereof, taking hold of the said Spirits, being now as it were broken, and more violently smitten, so that with their utmost Force and Endeavours, they are unable to contrast therewith, or to gain a Victory in the Space of one Day, two or three, there is then form'd the *Synochus*, or Continual Fever.

Again, from a yet more intense Degree of this *poisonous Ferment*, the Spirits less able to expand themselves or disengage therefrom, notwithstanding their utmost Efforts and Labour, they now grow enraged and tumultuating, are, as I may say, hurried into a State of *Explosion*, blowing up the whole Fabrick;  
some-

sometimes exciting enormous Vomitings, at others carrying all before them into the Close-Stool; sometimes breaking forth in sallies both ways at once. Hence the *Inflammatory Fever*, or the *Colliquative*, together with the *Rheumatic*, universal or particular; the *Plurisy*, *Peripneumony*, *Angina*, the *Scarlet*, *Varolous*, *Morbillous*, the *Diarrhæa*, *Dysenteria*, *Cholera* and *Cholic* of the Stomach and Guts, according to the diverse *Indoles* of the *Venom*, thus affecting the Spirits, with their concomitant Symptoms.

Lastly, from the highest Degree of the *Contagious Miasms*, ariseth the *Malignant*, or *σύννοχος*, the extreme of which produceth the *Pestilential* or the Plague it self; when the Spirits, by means thereof are knocked down in the twinkling of an Eye, at the first onset; and being *impares Congressui Venenato*, resign their Arms, after they have received several Marks of their Enemies Weapons, as the *black* and *blue Spots*, *Carbuncles*, &c. But here you are to note, that as the



*Benign* or *Mild* is sometimes changed into the *Malignant*, so this last may tack about, recover new strength, and turn to the *Benign* or *Mild* (the worst of them in the Beginning taking the appearance of the *febris continens*) accordingly as the Spirits are prepared for battle; for as I have already observ'd, where these are *strong*, and the *Venom mild* in its Nature, the  $\sigma\upsilon\nu\omicron\chi\tilde{\eta}\varsigma$  is produc'd; but where that is *potent*, and these are *weak*, the  $\sigma\acute{\upsilon}\nu\omicron\chi\textcircled{\text{C}}$ , which always partakes of *Malignity*, and before it can be subdued, its shape must be changed into that of the  $\sigma\upsilon\nu\omicron\chi\tilde{\eta}\varsigma$ .<sup>m</sup>

From this *Hypothesis* of the *Venene Ferment* taking seizure in this Manner upon the *Animal Spirits*, our Author deduces these two curative Indications, *viz.* the Extinction of the said *Ferment*, and Relief of the Symptoms.

If the Fever be of the *malign* Kind, the Expansion of the Spirits is to be promoted by *Alexipharmicks* and *Vesicato-*

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<sup>m</sup>, Elenchus Caputum Vol. I.

ries, the former more *mild*, if neither *Convulsion* nor *Coma* are present, and of the hotter Sort, if complicated therewith; but no Purgative is to be administer'd till the Poison is entirely subdued, either by the *Bark* or the warmer *Antidotes*.

I have given you here, Sir, a Translation in a Manner of *Pyrophilus's* own Words<sup>n</sup>, by which you may see how this learned Physician, after the Example of his Predecessor Dr. *Willis*, is marshalling his Army of Spirits, leading them on to encounter the Enemy, detaching some one way, whilst others are order'd a quite contrary; some firing from one quarter, others vanquish'd and put to flight, that had been call'd to a different Post: So that if this be not building Castles in the Air, to be attack'd by *Phantoms*, or laying a Superstructure that has no Foundation, nothing can: The Difference indeed is wide in the Consequence, in that, one may be demolish'd without Danger, but by the other, we

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<sup>n</sup> See the Elenchus aforesaid.

are sacrificing Mens Lives to meer *Hypothesis*.

To the same Degree of Inadvertency, not to call it Madness, did this Gentleman carry his grand *Antidote*, the *Bark*, which was thrown in upon every the least Remission, or before any Type was formed that might encourage the same to be given with Safety. It must be own'd he had great Success in curing Fevers, about the Time he compil'd his Treatise upon that Subject, when the Fever, which was then *epidemical*, had a more than common Disposition to the *intermittent* Kind. But should we at all Times, embolden'd by his Example, fall upon the same Practice, how fatal it must often be, I shall leave the most experienc'd of the Faculty to determine; being my self sufficiently convinc'd by diverse late Miscarriages of some, through its ill timed Administration.

But I shall no longer detain you with this learned Man's Hypothesis, which was level'd rather to burn than freeze the  
poor



poor patient to Death; or if he happen'd to escape, it was to be however *through Fire*, as our late Commentator upon *Hippoc. de Feb.* has thus exprest it. ° *Nam & Illæ ipsæ, quas adducit Historiæ, palam faciunt, plerosque quorum curam habuit egrotos, aut excalefactos interiisse, aut saltem ως διὰ πυρός evasisse.*

And thus in *Fevers*, requiring the most temperate or rather cooling *Regimen*, as those of the *inflammatory* Kind; and particularly the confluent *Small Pox*, the Sick were sure to be scorched up with the hottest Medicines, under a pretext of fortifying the Spirits, against a supposed Poison that had taken hold of them; but enough is said hereof.

To enter now upon the Definitions of *Fevers*, given us by sundry Writers, would be almost an endless and a useless Task; as containing very little Instruction, I might say none in the Cure there-

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° Comment. 7.

of: Thus one tells us, that a *Fever* is nothing more than a *prædominancy* of the *sulphureo saline Particles* over the *salino sulphureous*; a second, that the *Essence* thereof depends upon the *inordinate Elevation or Exaltation* of the *oily or fiery Particles*, above the *terrene and watery*. The Chymists make a *Stir* about their *Acid* and *Alkaly*, contending for the *Victory*, together with the *Discord* of their *Principles*.

Our famous *Willis*, who was a *Fautor* to some of these, expresseth himself upon this Head in the following Words <sup>p</sup>.

*Veruntamen ipsa febris, est solummodo Sanguis (cum liquore nervoso succo alibili & sero adscitiis) qui excandescencia sua, supra modum ebulliens & per vasa cum impetu citatus, calorem præter naturalem in toto corpore diffundit, ac Febris rationem formalem inducit.*

And coming to explain himself farther upon the same, he goes on, *attamen quo*

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<sup>p</sup> Opera *Willisij* apud non Vol. I. p. 63.

*pacto hoc fiat, non nisi ex Sanguinis ejusdem Natura intime perspecta, & liquoris ejus velut Anatome, Spiritu (scil.) sulphure, sale, terra, & phlegmate, planum habeatur.*

Some others of them have made shorter Work, as well in the Defining, as the Cure, confidently asserting that a *Fever* is nothing else but the *Archæus* enraged; and accordingly boasting of their several *Panacæa's* or *Sedativa*, assure us, that without any regard to Evacuation of *morbid Particles* or *peccant Matter*, the same will allay the Tumult, and render all tranquil, throughout the *animal Government*.

Related surely to this, is the Story of *Cardimelech* and *Michrocrometer*, so formally told by a late grave Writer <sup>a</sup> in his *History of Physick*, altho' fit only to be inserted in a *physical Romance*; but leaving this Jargon to the Tribe it belongs, and who under the vail of uncouth Epi-

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<sup>a</sup> Dr. F——d.



thets, mysterious, dark and obscure Phrases, or unintelligible Sounds, amuse their Readers with strange Notions of their *Mysticks* or profound *Philosophy*, as being Nature's chief Favourites, and let into her Secrets: I shall take no farther Notice of them, nor yet of the *hypothetical* Writers peculiarly so denominated; but hasten to those which are term'd *Mechanical*, where surely we may expect some greater Certainty and Satisfaction, as well as safer Guide to Practice, on the account of the mathematical Demonstration here promis'd us.

But alas, dear Sir, I am afraid we are now as much bewildred as in the former, and that the Certainty these pretend to in their *Theorems*, *Propositions*, *Axioms*, *Lemma's*, *Scholia's*, *Corollaria's*, or whatever they please to call them, will afford us as little help in the Cure of *Fevers*, as those we have now mention'd.

They tell us indeed, that the Body of Man, as of other Animals, is only a piece

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of

of *Mechanism*, form'd by *mechanic Laws*: That as the solid Parts are subjected to the Rules of *Geometry*, so are the Fluids to the *Hydrostaticks*; and that there is always an *Equilibrium* maintain'd between these two, when the *Machine* is in right order, which is what we call the State of *Health*: Sickness being nothing else than a Disorder of some kind, either in the *Solids* or the *Fluids*, by which the said *Equilibrium* is destroy'd, or the *Balance* turn'd to one side or the other.

*Reason*  
A *Standard* : *Bearer* who hath lately furnish'd out a New *Theory of Physick*, reconcil'd to Sir *Isaac Newton's Principles*, is so very fond, and full of this *Balance of Nature*, that we have few pages without it.

First of all, he tells us that all Diseases, whether *Acute* or *Chronic*, ' depend  
' on the Motion of the Vessels elevated  
' or deprest beyond the *Standard of Na-*

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' Dr. R——.

' ture :

ture: And the several Degrees of them,  
to the several Degrees of Contraction  
or Relaxation of such Vessels; and the  
Motion of the Fluids consequent there-  
on; for (saith he) an Augmentation or  
Contraction of the Vessels elevated, (*do  
you mind me*) above the *Balance* of  
*Nature*, will encrease the Division of  
the Blood; which encreased Division  
of the Blood, will augment the Motion;  
the Quantity and Heat, and so beget a  
*Fever*; which is no other than an in-  
creased Motion of the Blood from a  
vibration of the Vessels above the *Stan-  
dard of Nature*: For there cannot be  
an inordinate Elevation of the oily or  
fiery Parts of the Blood, as Sir R---d,  
B---r supposes, unless the *Solids* are  
equally elevated above the *Standard of  
Nature*. In a slight *Fever*, the Blood  
encreases but little above the *Balance*;  
as in the *Ephemera*, which when of  
more than one day turns to a *Synochus*,  
which is but the same *Fever* farther  
augmented beyond the *Balance of Na-*



‘ *ture* : this turns to the putrid *Synochus*,  
 ‘ and this to a *Causus*.

‘ Again, saith this expert *Mechanician*,  
 ‘ as *acute Diseases*, such as *Fevers*, pro-  
 ‘ ceed from the Blood’s thus encreasing  
 ‘ above the *Balance* ; so *Chronicks* pro-  
 ‘ ceed from the *Solids* deprest beneath  
 ‘ the *Balance of Nature*.’

Upon the first of these, for the sake of  
 its Singularity and Perspicuity, I shall  
 present you with a Thread of his Argu-  
 ment, that you may see how Sir *Isaac*  
 is carry’d all the way therein.<sup>f</sup>

‘ From an elevated Contraction, the  
 ‘ Blood obtains a greater Force and Mo-  
 ‘ tion ; hence greater Division, hence an  
 ‘ encrease of Quantity and Fluidity : And  
 ‘ thus from greater *Division, Motion* and  
 ‘ *Quantity* encreased, must arise *Heat*,  
 ‘ *Thirst*, with the other concomitant  
 ‘ Symptoms of a *Fever* ; for the Blood  
 ‘ *dividing* faster than it can be detach’d

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<sup>f</sup> Vid. *New Theory of Physick* founded upon the Prin-  
 ciples of Sir *Isaac Newton*.

‘ through

‘ through the perspiratory Emunctories of  
 ‘ the Skin, is the immediate Cause of  
 ‘ the Heart’s preternatural beating: Which  
 ‘ preternatural Division of the Blood, a-  
 ‘ rises from the additional quantity of  
 ‘ the obstructed perspirable Matter, ad-  
 ‘ ded to the natural quantity of the Blood:  
 ‘ *but hear a little more.*

‘ The Cause of all acute, inflamma-  
 ‘ tory Fevers, such as the *Quincy, Pleu-*  
 ‘ *risy, &c.* is from a Contraction of the  
 ‘ Heart and Arteries elevated above the  
 ‘ *Balance of Nature*: This elevated Con-  
 ‘ traction causes the Blood to take up  
 ‘ more room by fusing it in the Arteries,  
 ‘ which causes a greater glut to be de-  
 ‘ termin’d upon the *Lungs, Pleura, in-*  
 ‘ *tercostal Muscles*, than the Vessels of  
 ‘ the same can dispense with; which  
 ‘ therefore causes *Stagnation*, turning to  
 ‘ an *Inflammation*, which causes all the  
 ‘ Symptoms attending these Diseases;  
 ‘ but the Cause of *Quincy’s* particularly,  
 ‘ is from the Blood’s stagnating on the  
 ‘ Parts of the *Larynx*: And the Blood

‘ stagnates upon the Parts of the *Larynx*,  
 ‘ because the Contraction of the *carotid*  
 ‘ *Arteries* is elevated above the *Balance*,  
 ‘ which causes the greater glut than those  
 ‘ Parts can detach by the secretory Vef-  
 ‘ sels, upon which a Lodgment is made,  
 ‘ which causes the *Inflammation*, *Fever*,  
 ‘ *quick Pulse*, and all the Symptoms.’

You have heard the Story, I doubt not,  
 of the Butcher that kill’d the Ox, that  
 gor’d the Dog, that worry’d the Cat, that  
 kill’d the Rat, that kill’d the Mouse, that  
 eat the Corn, that lay in the House that  
*Jack* built. Having now done with the  
*inflammatory*, you shall have a Taste only  
 of the same *Mechanism*, in the *malignant*  
*Fever*.

‘ In very *malignant Fevers*, some Parts  
 ‘ of the Blood are often separated from  
 ‘ the Mass, when being by the Force of  
 ‘ the Arteries, driven beyond the sphere  
 ‘ of Attraction (*the Balance is laid aside*  
 ‘ *for the present*) they can never after  
 ‘ joyn again therewith, because of the  
 ‘ Blood’s *Repulsion*; but assuming to them-  
 ‘ selves



‘ selves an *attractive Power*, (for you  
 ‘ must understand, there is in the Blood  
 ‘ an *electrical Attraction* as well as Re-  
 ‘ pulsion) they become the center of *At-*  
 ‘ traction to every Thing that comes  
 ‘ within their particular Spheres: Where  
 ‘ on the Surface thus impel’d, they form  
 ‘ *petechial Spots*, usually accompanying  
 ‘ *malign Fevers*.’

Our learned *Mechanician* is indeed so modest, that when descending to the Cause, *i. e.* the primary, of these kind of *Fevers*, tho’ he has discover’d that they proceed from the Air; yet how the Atoms are modify’d that constitute those Qualities therein, which become so hurtful to us, he does frankly own the same to be *supra Captum*.

There being somewhat so uncommon, I think, in this Gentleman’s close pursuit of an Argument, I shall, if only for your Entertainment, deviate a little, to present you with his *Mechanism* of *Chronicks*.

‘ Now, saith he, we are to consider  
‘ the Cure of Diseases arising from any  
‘ other state of the *Solids*, wherein the  
‘ Blood forms *Viscidities*, and of Con-  
‘ sequence, *chronic* Diseases, and the Blood  
‘ forms *Viscidities*, and consequently  
‘ *chronic* Diseases, when its compound-  
‘ ing Particles go into too close a Con-  
‘ tact; and they go into too close a Con-  
‘ tact, when they receive not due Infor-  
‘ mation from the *Solids*, when their  
‘ contractile Powers are impair’d and sunk  
‘ in their Motions beneath the *Balance*  
‘ of Nature: As to the Cure of these  
‘ our Business is, (*do you observe*) to  
‘ get acquainted with a set of Medicines,  
‘ that will raise the impulse of the *Solids*,  
‘ encrease their natural Springiness, and  
‘ restore their *Machinulae*, upon which  
‘ their contractile Powers depend; which  
‘ will enable them to fuse the Blood, de-  
‘ stroy the *Viscidities*, and render them  
‘ small enough to pass their *Secretions*.’

From all this *mechanically* connected,  
having shewn us the Cure of *chronical*  
Diseases,

Diseases, he gives us the following of acute, but particularly *Fevers*.

‘ That the Ground of all *Fevers* being  
 ‘ in the Blood’s dividing faster than can  
 ‘ be detach’d by the several *Emunctories*,  
 ‘ from an Elevation of the *Solids* above  
 ‘ the *Balance* ; (*which we have now again*  
 ‘ *taken up*) Bleeding is consequently the  
 ‘ best Remedy to take off the Tension of  
 ‘ the *Solids*, and subtracting the Cause,  
 ‘ by removing also some part of the ad-  
 ‘ ditional Load. Secondly, To admini-  
 ‘ ster *Sudorifics* or Sweating Remedies ;  
 ‘ but if Sweating cannot be procur’d, you  
 ‘ must lastly push by *Purging*, which is  
 ‘ to be repeated every other Day (*which*  
 ‘ *he assures you is justifiable by a great*  
 ‘ *Man’s Practice in a nervous Fever,*  
 ‘ *where no Sweat could be raised, till af-*  
 ‘ *ter this Way was try’d by Purging*)  
 ‘ Observing always to spur on the *Solids*  
 ‘ in these sluggish Cases, where they are  
 ‘ sunk beneath the *Balance*. Lastly, If  
 ‘ there be a great Heat, a dry Skin, a  
 ‘ hard Pulse, black and dry Tongue to-  
 ‘ wards



‘wards the height of the Disease, and  
 ‘no Sweat can be procur’d; you are then  
 ‘to have recourse to Purging, as the  
 ‘*Asylum*, and throw, it seems, the stress  
 ‘of the Cure upon the Issue of the Ope-  
 ‘ration of these Medicines.’

I have given you this Recital of a new  
 physical Discovery, as a Specimen thereof,  
 reconcil’d to *mechanic Principles*, or sol-  
 ved by those of Sir *I. Newton*, as the  
 Author terms it, that you may judge in  
 what manner your Understanding is to  
 be improv’d, or your Judgment better’d  
 in the Cure of *Fevers*: I might have told  
 you also, how far this wonderful Man  
 has exceeded even Sir *I—c* himself,  
 who never had Courage enough to de-  
 fine or meddle with the *motor primus*  
 of the *Machine*, I mean the *animal Spi-  
 rits*, contenting himself with his Prin-  
 ciples of *Attraction* and *Gravitation*,  
 whilst our *Adept*, whether by *Fire* or  
*Water*, dogmatically, as from the *Del-  
 phic Oracle*, delivers himself thus.

Robinson

Both

‘ Both the *Solids* and *Fluids* of an animal Body are endow’d not only with this principle of *Attraction* and *Repulsion*, but there is also in them an *electrical Attraction*: Their Actions are reciprocal, but the first Impulse is from the *Solids*, whence Heat and Motion in the Blood.’

Would you know now what it is that gives this Motion to the *Solids*. ‘ The *Spirits* give rise to the Contraction of the Heart; the Heart gives Motion to these *Spirits*: The Particles of the Air (*here comes the Mystery*) and *fine pungent Salts*, forcing into the Lungs, gives the first Principle of Motion to the *animal Machine*; for neither the influx of animal *Spirits*, much less the Ebullition and Accention of the Blood, can be the Cause of the Heart’s Motion; but rather the same is effected by the said aerial pungent Salts, pricking the fibrous Substance of this Bowel, or rather the Vessels leading thereto; which is the Origine of all Pulsation, Motion

‘ Motion of the Heart, and Circulation  
‘ of the Blood.’

Thus Dr. you see how the *impetum faciens* of *Hippocrates*, which has lain conceal’d as to its *ὄτις* for more than two thousand Years, I may say from the time of the *Protoplast*, and by the greatest Men of past Ages, as well as the present, was deem’d a *Problem* inexplicable : In-  
somuch that our famous *Lower*, who was as well acquainted with the *Penetralia Cordis* as any Man, did acknowledge that it was the sole Property of the grand *καρδιαγνώστης*, who had form’d this *Viscus*, to know the Reason also of its Motion : How this, I say, is now mechanically accounted for by Dr. *R—n*; but how he will get over that of the little *fœtus Machines*, whose Lungs were never stung nor twitch’d; nor yet the Vessels leading to their Hearts, by any of these *pungent, fine, aerial Salts*, I know not; and therefore must leave him to find out, whilst I now come to remark some others, more profess’dly in the *mathematical* Way.

In



In this number among the Foreigners, we must reckon *Borellus* and *Bellini*, also *Gulielmini*, *Baglivi*, *Bernoulli*, *Leibnitius*, *Morgagnus*, *Hermannus*, *Lancisius*, *Mangetus*, *Astrucius*, *Mariottus*, *Littrius*, *Homborgius*, *Michellottus*, *Blancus*, *Fantonus*, with some others I could name: Nor among our own Countrymen, must I forget the excellently learned Dr. *Mead* and *Freind*, the late Dr. *J. Keil* and *Pitcairn*, Dr. *Cheyne*, *Jurin*, *Cockborn*, with others.

I am not unacquainted, since it grew modish for Physicians to draw *Diagrams* in their Writings, with the *dumb Language*, or the *conjuring Characters*, as they are named by some, we have had many Smatterers this Way: but whoever thoroughly weighs them with the rest of their Performances, will find they have enter'd many of them as it were by Rote, pickt them out from *Propositions* or *Problems* of some of these; and set them down to amuse the less heedful Reader: And I purposely omit certain great and wonder-

wonderful Men this Way, such as that very transcendent Gentleman Sir *Isaac Newton*, as professedly *Mathematicians*, not *Physicians* meerly, with whom our Business is at present: Nor can I persuade my self, that the Inventions of the former were ever intended so much to benefit the Art of Healing, which is not likely to be promoted by any *Letters* of the *Alphabet*, or *Figures in Arithmetic*, placed in what Manner soever, neither yet by *Lines* of any sort, as for the Advancement of *Astronomy*, *Architecture*, *Optics*, *Hydraulics*, *Hydrostatics*, &c.

No surely, these great Men in their way, were too well apprized that the want of *Data* at these Times, of which all complain, would hinder any *certain-ty*, i. e. *Mathematical*, to be obtain'd: And by some means or other render their *Calculi* very precarious.

For tho' the *Solids* of our Bodies being form'd by their Maker, according to the strictest Laws of *Geometry*, may be, in many Cases, reconcilable to those  
Rules,

Rules, as appears evident from one we have already named † in an admirable Treatise of the Motion of Animals: Yet are the *Fluids*, wherein most *acute Diseases* (especially that about which we are discoursing) affecting us, are concern'd, so widely differing from any other without us, as well as the Vessels containing them, that the *Problems* founded upon *Hydraulics*, or *Hydrostatics*, either, will never reach them so exactly, but that we shall be still liable to commit Mistakes, and to be led into Errors, some of them of the utmost Consequence to Life: Nor will any of these, assure your self, at any Time, afford Help in the Cure of *Fevers*, where all your *Indications* must be taken from some present Appearance unforeseen, and which admits scarce any Argument, which is assumed *a priori*.

Alas! dear Dr. what avails it to us, that we are told, *The Pressure of an in-*

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† Borellus de motu Animalium.



*cement Fluid upon a Solid, is in Proportion to the Altitude? That Fluids running from a larger Syphon into a less, the Liquids run with the greater Velocity in the lesser Tube? But if the total Sum of the Orifice of the lesser Tubes be more numerous than the Area of the transverse Sections of the greater, then the Fluids run slower in the lesser Tubes. What, that Fluids cannot move on, unless the impelling Force conquer the Resistance, for who knows not this! or that in all, there is a Center of Gravity and Gravitation? What, that the Altitudes of Projectiles are to each other in a duplicate Ratio of their Velocities! What, again, that Cylinders are to each other in a Ratio compounded of their Bases and Altitudes! that is, if the Base of one Cylinder be 9, and another 6, and the Altitude of one 4, and the other 2, then are they to each other as  $4 \times 9 = 36$  to  $6 \times 2 = 12$ . Again, that attraction of Bodies is as the Squares of their Distances; or that in a Cone, the greatest*  
Resistance

*Resistance to Motion is at the Vertex: That if the Blood be so vitiated as that the Strengths be augmented or diminished, 'tis the same as if the Blood offended in its Quantity: That the Heat of the Body is in a Ratio compounded of the Blood, its Celerity and its constituent Particles: That Quantities are to each other as the Density of the Radii, and this Density reciprocally as the Distance of the radiating Point, or as the Squares of the same Radii: That secreted Liquors in our Bodies differ in Degrees of Cohesion, Fluidity and Quantity: That a Fluid of equal Velocity with another, but of greater Gravity, gives a greater Ictus than one with equal Velocity and less Gravity: Lastly, (to instance in no more) that in Cones the Resistance is least in their Axis.*

What, I say, avails it to us in the Case of Fevers, to be acquainted with such and many more that are prefix'd to a late Treatise of these Diseases, <sup>u</sup> with which in

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<sup>u</sup> Criticon Februm.

Respect to the Cure of the same, they had for the most part, if not all of them, been as well left out?

That they are solidly founded, I shall not question, and as little their Use in other Parts of the *Mechanics*, particularly, as I have already intimated, in *Hydraulic* and *Hydraultical* Experiments; but whoever considers the *Blood*, as a *Fluid* compounded of divers Parts, and varying from a hundred imperceptible Occasions in its Texture; sometimes running out into a thin *Fluor*, at others tending rather to *grumescency*, together with its changeable *Impetus* from the Cystern, I mean the Heart, according to the Dispence of the nervous Fluid, now more, then less interrupted and continued. Again, whoever weighs rightly the Fabrick also of the Vessels through which it circulates, their divers Elasticity, Contraction and Dilatability in one Body from another; nay, even in one and the same Section, at some times, of the same Vessel, from original Formation  
or



Let. I. *Concerning* FEVERS.

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or adventitious Causes, that are inscrutable, at least, during Life, which must influence the Motion thereof: Whoever, I say, will nicely observe these, which shall be presently farther noticed, may soon perceive that no *arithmetical* Proportion, no *algebraic* Calculation, no *geometrical* Mensuration, no *Axioms* deduced from the *specific Gravity* of other *Fluids*, their *Moments*, Degrees of *Attraction*, *Repulsion*, nor the impelling Force by which they are thrown forth their several Pipes, will give us any just or adequate Idea of *Fevers*, much less advantage us in their Cure, which you will find, after all, is to be founded only upon a diligent Observation, not of *Squares*, *Circles*, *Tangents*, *Angles* of *Incidence*, *Gravity*, *electrical Attraction*, or the like *cant Words*, (for they are no other when inserted in a practical Discourse of *Fevers*,) but of *Nature*, which way moving to help her self, and *Remedies* by Experience found out to forward such her Endeavours, agreeable to

D 2

what

what the same Person has laid down in another Part of his Treatise, *viz. That Physicians must at all Times avoid begging the Question, or affirming any Thing contrary to known Experience, but proceed with Reason, back'd by the same, which is the sole Prop they can securely rely on.*

I must expect to be censur'd by some of these worthy Gentlemen, as an Enemy to those *physical* and *mathematical* Disquisitions, by which alone, they say, our Art can be set upon any solid Foundation, and the *Phænomena* of *Health* or *Sickness* intelligibly explain'd; but I desire they will consider that I am far from reprehending any such Enquiries, among speculative Persons or otherwise, so far as we are thereby afforded any Help in our Way of healing the Sick, or furnished with satisfactory and certain Accounts how the *Phænomena* of human Bodies, either *sound* or *diseased*, are reconcilable to *mechanic Laws*, about which I have often busied my self, and doubt  
not

not but greater Light has been given to Physick hereby, in this last Age, as well as larger Insight into the Nature of some Diseases, than by all the mystical Learning of the Antients, or the as unintelligible Explanations of the same, attempted since upon some other Principles: And I could wish it were possible (altho' I think, I must own, that it is not) with Dr. Freind, that some able Hand would set this Matter in a true Light, and illustrate the same, so far as may be from the unalterable Laws which Nature has imprest upon all Matter and Motion; <sup>w</sup> for since the human Body (as he observes) is nothing else but a fine Contexture of Solids and Fluids, which observe the Rules of Mechanism, it is amazing to find that Men should think of any other Principles than the mechanical, to explain it by.

But then surely it is amazing also, that any Man should take upon him to ex-

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<sup>w</sup> See his History of Physick.



plain those Appearances therein, which however in themselves *mechanically* produced, he is never like to be thoroughly acquainted with the *Modus* of their Production, especially if being out in his Conjecture, the Life of his fellow Creature may be in Danger: For as our Country-Man *Sydenham* has observ'd, ‘ there  
‘ are two Sorts of Men (each in their  
‘ turn liable to do Mischief) who obstruct the Improvement of the Art of  
‘ Physick: The first, those who adding  
‘ nothing to the Increase of the Art they  
‘ profess, despise others who do improve it, hiding their Defect and Sloth  
‘ under the Pretext of Reverence to *Antiquity*, from whence they will not recede a Hair’s breadth. The second, on  
‘ the contrary, acting out of Levity of  
‘ Mind, or affecting the Title of *profound Wits*, troublesomely intrude  
‘ Speculations, many of them out of the  
‘ Way, to advance the Cure of Diseases, not so properly shewing the Way  
‘ to Physicians, as making them stray  
from

' from it, by their *ignes fatui*. Nature,  
 ' saith he, has bestow'd so much Wit  
 ' upon these People, as enables them to  
 ' trifle learnedly, but has fail'd them  
 ' in the prudential Part, whereby they  
 ' should know that they can understand  
 ' nothing any other Way than by *Ex-*  
 ' *perience*, which unvails her; for the ab-  
 ' ject Condition of the human Mind,  
 ' being unable to rise to an intuitive  
 ' Science, is restrain'd to the narrow  
 ' Bounds of Knowledge, which it re-  
 ' ceives from the Senses; so that not-  
 ' withstanding a Man may become pru-  
 ' dent, as the human Lot will allow, yet  
 ' a *Philosopher*, according to the au-  
 ' gust Majesty of the Name, no mortal  
 ' can be; and therefore all the Physi-  
 ' cian's Philosophy consists wholly in  
 ' searching the *History of Diseases*, and  
 ' for *Remedies*, found only by *Experi-*  
 ' *ence*, that are able to overcome them;  
 ' observing the Method which right Rea-  
 ' son, founded on the common and na-  
 ' tural Way of thinking, not the Com-

‘mentaries of Speculation, dictates to  
‘him.’<sup>x</sup>

What tho’ it be granted, as our learned Commentator y has remark’d, that *no Man goes about to account for the Motion of a Watch, by the precarious Principles of Acid and Alkaly, or any other than the mechanical, by which it is put together.* Is it not also granted that no Man, by the same Principles, can rightly discover the several Defects in that little Machine, unless the Artificer, who being thoroughly acquainted with every Part of the *Movement*, can only see where some Defects thereof may happen to lie conceal’d from other Eyes? So likewise, I fear, notwithstanding all Improvements this Way, will it sometimes fall out with the *animal* one, where the Disorder is visible only to an all-seeing Eye, and where less Abilities

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<sup>x</sup> Sydenham’s Practice of Physick.

<sup>y</sup> F——d, in his Hist. of Physick aforesaid.



than the Maker's, will be unable *mechanically* to adjust the same.

Let us then, good Sir, where there is Room, argue as much as may be, upon these Principles ; but let us not pretend to found curative Indications, when Observation and Experience run counter, and will not justify the same ; for if our *mechanic Theorems*, how nicely soever framed, are not confirm'd by these, what plainer Demonstration can we have (and surely this is *Mathematical*) that we mistook the Case, or that we are out in some part of our Account, whereby, as an Oversight in the minutest Fraction, overthrows the whole Computation, and lays us under a Necessity of a fresh Calculation ? So happens it here, but with this unhappy Difference, that by the one we only lose our Labour, by the other, it may be our Patient's Life ; it is then surely your safest way (when so inclin'd) to discourse *mechanically* of the Disease, and its Symptoms, over the Bottle, but to practise by *Observation*  
at

at the bedside of the Sick : All which I contend for, being this, that we carry not any of our Disquisitions of this kind, to Subjects unto which, through the imbecillity of our Intellects, they cannot with certainty be applied, at least in such manner, as to forward the Recovery of the sick Person.

I hope they will consider, we are not now applying the *Rule* to Bodies inanimate, or putting simple *Fluids* into the *Balance* : We are not counting the *Moments* of these under their several Pressures or Impulses, but the *Moments* (and surely momentous is the same) of *humane Blood* : That the Lives of our fellow Citizens, with which we are entrusted, is in the Scale ; shall we then put these upon a very uncertain Reckoning to be made this Way, which considering the Disagreement among themselves about some *physical Problems*, is scarce likely to be obtain'd at all ?

And truly, Sir, whoever considers the Nature of *Fewers*, especially, such as I call

call *Mali Moris*, will see abundant Cause, if I am not deceiv'd my self, to think no *Rationale*, either *physical* or *mechanical*, is to be form'd thereon: And that to pretend to argue thence at some times, is but to expose our selves to the Smile of the more eminent Artists; for undoubtedly all we know, or can understand of these, is this, that there is somewhat foreign, or praternatural got into the Blood, whether *extrinsic*, as coming from without, or *intrinsic*, arising some how within its Mass, which being hereby exagitated and disturbed, *Nature* (give me leave to use the vulgar Expression) now rouseth, and endeavours to free her self thereof: That sometimes, notwithstanding all Assistance from Art, she is forced to succumb; at others, of her self, even without such Aid, she gets the upper hand, and throws off her Enemy; but how this is transacted all this while in the *Sinus* of the Blood; how she fits or prepares this Matter to be carry'd off, nor yet by what Passages or Outlets,



Outlets, is *a priori* to us impenetrable, and like to be so: Nor can any help from mathematical *Problems* instruct us how she operates at these Times, or afford Help, not founded upon *Experience*, to support her under the Conflicts; for as we know not the Instruments she intends to use, nor the way she will take at all Times, to discharge her self of her Burthen; so neither will the Knowledge of the *Make or Texture, the specific Gravity, Force of Attraction, or the like*, of any Remedy, either simple or compound, the better enable us to form a Judgment what it can effect, before it has been administer'd, and found serviceable upon Tryal, to answer the Intention.

I dare say none will alledge, that any one of these was ever given from the Knowledge meerly of their component Corpuscles, were they to be found out, or their propriety hence, to answer this or the other physical Intention, whether obtain'd in the way of chymical *Analysis*, or any other.

As

As finding *Opium*, hereby, for Example, fitted to relax and take off the Tension of the *Membranes* and Fibers of the Brain, occasioning the Inquietude, with attending *Vigil*, thereby procuring Ease and Rest. That *Mercury* after the like Examination of its Parts, was found more fit than other Minerals, or Drug whatever to fuse the Humours, and colliquate the Juices, in such Manner as to force them to run off by the Glands of the *Fauces*, by which the whole Mass might be as it were refin'd and depurated: That *Steel* upon some such Tryal, was first observed, better qualified than others, to invigorate the Blood, break its *Cohesions*, divide its *Lentor*, and by these Qualities enabled to restore a good Complexion to *Cacheectics* and *Chlorotics*; or that lastly, having in like Manner scrutinised the *Crocus* of Antimony, 'twas found by some of its component Particles, that being therein steeped for some Hours, it would imbue the Wine, and that without loss of its specific Gravity, with a Power of

inverting the *peristaltic* Motion of the Stomach, and raise that particular Operation therein, which we call Vomiting. That these, I say, were therefore called into Use, upon the several Accounts here mentioned, but such particular Effects, having been found the usual Consequents of their several Administrations, after repeated Tryals, they have been, for these Reasons, made use of therefore, when there seemed to us Occasion for them.

From all which I would only infer, that this same *Experience*, founded upon a just and sedulous Enquiry, and Observation of what has, and is farther likely to ensue, under the same appearing Circumstances, must guide us in all such Cases, where through the Nature thereof, we can have no *Præcognita*, as I think in *Fevers* we have not, without regard to *Propositions* or *Theorems* of any Kind, which serve only to puzzle or perplex, and too often, through Mistake in Computation, subject us to fatal Errors.

I could tell you how I have been sometimes



times interrupted by Persons affecting this way of Conversation in the Practice of Physick : Particularly one, whose Head is ever full of the new Mode, was lately call'd in upon me : My Patient labouring under a *Peripneumony*, had been blooded three Times in so many Days, a Blister had been apply'd between his Shoulders, and several Pectorals administer'd ; but the *Dyspnea* still continuing, with little Expectoration, and that a viscid Phlegm, hard to be raised, the oily Medicines effecting nothing, I propos'd now in Consultation, the *Oxymel Scyllit.* when the Gentleman objected the Hazard hereby, of relaxing the *Bronchia*, together with their orbicular Fibres, and hindring their contractile Power, which was now wanting to squeeze out the viscid Humour obstructing the same : And therefore he was for *volatile Medicines*, as better fitted to invigorate the nervous Fibres, to divide the *Lentor*, destroy the *Cohesion* of the Blood, and give a Spring to the *Machinula* of the Lungs.

I gave little Heed to this Harangue, but smil'd and left him then to act as he thought proper; but acquainting the Patient's Friends with the great Danger he was in, having agreed upon more *Blisters*, I desir'd a third Person might be sent for, to meet us the same Day towards Evening. When by Appointment, coming together, and having farther consider'd our Patient's Condition, the *Oxymel* being mention'd, the same Person repeating his Fears of relaxing the *Bronchus*, &c. the grave old Gentleman reply'd, pray Sir, no more fiddle faddle, if you can tell us upon your own Trial, of a better Remedy than the *Oxymel* on this Occasion, let us have it; since there is no Laxity in the Bowels to forbid it, never fear the *Bronchiæ* being relaxed; if we can so far relax the Phlegm, as to fit it for Expectoration, 'tis all we have to do, nor do I know a better Remedy under the present Circumstances of the Patient, tho' all, I fear, will be insufficient; accordingly the Mixture was prescribed, but suitable to the Prognostic, the Patient dyed next Day.

It

Not long after I had the Honour to meet the same Gentleman in a *pleuritick* Case and here the Scene was chang'd : I know not how, nor what Axiom we went upon ; but the *Oxymel* was now propounded to me. The Patient had taken freely of *pectoral Apofems*, *oily Draughts*, with *Linctus's* between whiles of the same Oyls : He had also been as largely blooded four several Times, the Pain still continuing with great Severity as ever ; whilst I, who long since learn'd from *Sydenham*, and had the same Lesson confirm'd by the judicious Dr. *Freind*,<sup>2</sup> objected now against this, and told him, I thought all Pectorals of little service in this Case, however preferable to other Remedies ; the Disease lying out of their reach, as to Expectoration, unless complicated with Inflammation of the Lungs, or some way communicating with the same, as in Cases of adhesion the one to the o-

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<sup>2</sup> See his Chapter of a Pleurisy *Comment. de Feb.*



ther: I therefore offer'd my Thoughts, since the Pulse flag'd, and discourag'd more Blood being drawn off by the Arm, to set on cupping Glasses on the pained Side, with light Scarification: Giving now the *volatile* Medicines, such as the *Spir. C. C. per se*, which he had recommended in the former: He ask'd, whether I propos'd the Cup by way of *Derivation* or *Revulsion*? I told him by the way of *Experience*, whence I had known much benefit accrue in the like Cases; or where it was hazardous to proceed farther by the Lancet, through the Patients weakness. At length, after some little *mathematical* Bickering, this was comply'd with; and thereby, together with the *Volatiles*, intermix'd with Boles *ex Sper. Ceti cum pulv. e chel. Canc. c.* with more Blistering he contended for to break the *Lentour*, divide the *Cohesions*, &c. we recover'd our Patient out of imminent Danger.

This, Sir, only for Illustration of what I must contend for, that a steady and diligent

ligent Observation of *Nature*, conflicting with a Disease, whose *Ratio formalis* we are not certainly acquainted with, together with what upon a series of Success, we have found serviceable on the like Occasions, will conduct us most securely to the method of Cure: And whatever Liberty these Persons take with the Characters of others, who talk not in their way, on the foot of *Arithmetic* or *Algebra*, we find that the best Practitioners among them, can throw away their *Theorems* upon entering the Chambers of the Sick, and readily come into Measures with us, *viz.* *Observation*, assisted with Reason and sound Judgment, of what they have found most useful, under the like Circumstances of the same Disease; for I am sure it would be very difficult to find upon what *mathematical Propositions*, their common Prescriptions, more than other Gentlemen's, are founded. To instance in some of these from Dr. *Pitcairn*.<sup>a</sup>

<sup>a</sup> See his Summary of the Elements of Physick.

‘ A Disease is the circulatory Motion  
‘ of the Blood, too much increased or  
‘ diminish’d; a Fever the Motion of  
‘ the same increas’d; a Symptom is some-  
‘ thing in a living Body, contrary to  
‘ Health or the Actions of a living Body,  
‘ or some Part thereof impair’d; Life  
‘ is the Circulation of the Blood,  
‘ thrown out of the Heart through the  
‘ Arteries, and returning again by the  
‘ Veins; Health is a healthful Life, or  
‘ a free Circulation of the Blood, with-  
‘ out Pain, which is injur’d by the En-  
‘ crease or Diminution of any Secretion;  
‘ all Diseases of the Fluids consist either  
‘ in a Change of their Qualities, or a  
‘ Change of the Velocity in their Mo-  
‘ tions; the Qualities of Fluids may be  
‘ changed, and their Secretions either  
‘ augmented or diminished; by the  
‘ Changes of Matter and Motion, are  
‘ produced all the Diseases of a living  
‘ Body, and their Cure must be by ad-  
‘ justing the Changes of Matter and Mo-  
‘ tion; these Changes, whether for the  
‘ better



' better or the worse, are perform'd by  
 ' mechanick Laws; the Cure of every Dis-  
 ' ease, whether of the Solids or Fluids,  
 ' are to be effected only by the said Laws;  
 ' all the Secretions in a living Body, are  
 ' performed only by the Laws of Me-  
 ' chanism, and promoted and restor'd by  
 ' the same Laws. From the Suppres-  
 ' sion of any Secretion, must necessari-  
 ' ly arise a Disease; all the Parts of  
 ' Fluids, are in an Equilibrium; the Ori-  
 ' fices of all the secretory Organs are  
 ' alike; all the Pores of the Glands  
 ' are circular; there is no Difference but  
 ' in their greater or lesser Capacities; in  
 ' two Places equally distant from the  
 ' Heart, if the secerning Vessels are equal  
 ' in Number, the Quantity secerned in  
 ' the first Place, ought to be to the  
 ' Quantity secerned in the second, as  
 ' the Orifices of the first are to  
 ' those of the second; If the Orifi-  
 ' ces of the Vessels are equal, the Quan-  
 ' tity secern'd in the first Place, ought

‘ to be to that in the second, as the  
‘ Number of the fecerning Vessels in  
‘ the first Place, is to the Number of the  
‘ fecerning Vessels in the second; a Fluid  
‘ whose Parts are all of the same Gra-  
‘ vity, will equally pass thro’ equal Ori-  
‘ fices, and *e contra*. Where the Parts are  
‘ not of equal Gravity, the heavier will  
‘ descend to the Center, and the Motion  
‘ of the flowing Parts will be encreas’d  
‘ or diminish’d in a given Proportion to  
‘ their Gravity; the heavier Parts of the  
‘ Blood are thrown upon Places where  
‘ there is the least Motion; these are  
‘ often lodg’d upon the Joints, whence  
‘ the Gout; upon the Gall-Bladder,  
‘ whence the Gall-Stones; upon the Re-  
‘ nal Ducts, hence Gravel in the Kid-  
‘ neys: If the Particles of the Blood have  
‘ Inclinations in respect to some cen-  
‘ tripetal, and to others centrifugal, then  
‘ a Separation of its Parts will more  
‘ easily happen after Blood-letting, when  
‘ it is left in the Vessels less crouded.

These

These, with an hundred others, as little to the Purpose of a practical Physician, are set down for wonderful Improvements, but contain, I think, very little Instruction, or have little more in them that is new, than (like *Hobb's Elements*,) the turn of Expression; the Produce of the *Gout* and *Stone*, especially from the *heavy* Parts of the Blood, seems an Explanation scarce worthy the excellent Author, or reconcilable to *mechanic* Laws; since there must doubtless concur more than simple Gravity therein, to the forming these Diseases, except we could prove those who have the *heaviest Blood*, were most afflicted therewith; and that these *heavy* Parts tend naturally or *mechanically* to the *Joints*, the *Gall-Bladder* and *Kidneys*, which I think will be found a Difficulty.

To these *Definitions* of Dr. *Pitcairn*, I shall here annex a short Account of some *Propositions* from the notable *Belini*, relating only to our subject: These two being the more remarkable in this



Way, whence you may form the better Judgment what Advantage is to be gain'd thereby, as to Practice; and whether their Followers have much regard to the same, in their *Formulae* of medicinal Prescription.

‘ There is no Fever without some  
‘ Fault in the Blood, nor can that be  
‘ faulty without some Way affecting its  
‘ Motion, Quantity or Quality, with  
‘ each of which the Pulse must be also  
‘ some Way vitiated.

‘ Since then every Fever is conjoin’d  
‘ with a faulty Pulse, and this with some  
‘ Fault in the Blood, it will be necessary to enquire after the several Ways  
‘ the Blood may be disorder’d; and whether each of these can affect the Pulse:  
‘ For having found that each, or all  
‘ these Ways of rendring the Blood  
‘ faulty, are necessarily conjoin’d with  
‘ some Disorder in the Pulse, and the  
‘ several Affections attending each particular Fever; we need not scruple to  
‘ affirm that this or the other Fever is  
‘ this

‘ this or that particular Fault in the  
 ‘ Blood, arising from this or the other  
 ‘ Cause: And hence collecting all the  
 ‘ several Faults under one common Ge-  
 ‘ nus, may we be able in general to de-  
 ‘ fine what a Fever truly is.

‘ From a Fault then in the Blood’s Mo-  
 ‘ tion the Pulse will be faulty, as also  
 ‘ from its Quantity, either increas’d or  
 ‘ diminish’d. The chief Faults in its  
 ‘ Quality are two, *viz.* its Principles  
 ‘ somehow vitiated, or its Operations  
 ‘ impeded: An Instance of the one we  
 ‘ have when the Cohesion of its con-  
 ‘ stituent Parts is increased, whereby  
 ‘ likewise the Pulse will be disorder’d,  
 ‘ as from the same much lessen’d; and  
 ‘ from this faulty Cohesion, possibly,  
 ‘ tho’ not necessarily, may arise a Vice  
 ‘ in the Pulse.

‘ The Cause inhibiting the usual Ope-  
 ‘ rations of this Fluid, is extrinsic to  
 ‘ the Blood it self, arising from some  
 ‘ foreign or adventitious Particles, and  
 ‘ is always attended with a Fault in the  
 ‘ Pulse,

‘ Pulse, from Admixture of the same.

‘ There is therefore no Fever without some Fault in the Blood, its Motion, Quantity or Quality, some one or all of these.’

Next of his *Definitions* of *Fevers*, both general and particular.

1. ‘ Every Fever is either *continual* or *intermitting*; the *continual* being either simply so, or *periodic*, or *erratic*. The *Intermitting* is only *periodic*, or *erratic*; this being the necessary Division of them, and containing the several Species.

2. ‘ A true *Ephemera* is a simple continual of twenty four Hours, finishing its Circuit sometimes in fewer, sometimes more.

3. ‘ The imputrid or *simple Synochus*, call’d *Inflativa*, consists also of one simple Fit, at the close whereof the Sick is no longer afflicted.

4. ‘ The *putrid* or *continent*, differs only from the former in its greater Heat, and more intense Affections, having



ving one round also, when the Patient grows well.

5. The *Causus* or *Ardent*, that returns not by Period, differs also from the two preceding, in the severer Burning or Heat, with extreme Thirst accompanying.

6. The *Hectic* is a Fever with uniform Heat and Pulse, except, that after Meals, both of them are encreased.

7. As to the *Malign* or *Pestilent*, all these are either *primary* and *essential*, or *secondary* and symptomatical, being for the most Part of the continual Kind, altho' they may both happen to intermit, especially when depending upon Causes thereunto disposing; of which Sort are the *Phlegmonodes*, *Erysipelatodes*, *Typhodes*, *Lenta*, *Morbillosa*, *Variolosa*.

8. The continued *periodical Quotidian*, is a Fault in the Quality of the same Fluid the Blood, render'd less *fluxile*, by Means of a certain Lensor  
or

‘ or Viscidity therein, which being al-  
 ‘ ways the same, returns every Day, some  
 ‘ terrene or earthy Parts sticking in the  
 ‘ capillary Arteries, whilst the thinner  
 ‘ pass on, or perspire; this *Lentour* is  
 ‘ supply’d from the Bowels, or some par-  
 ‘ ticular Part of the Body; and constantly  
 ‘ thus daily impacted in the Vessels, gives  
 ‘ rise to this particular *Intermittent* or  
 ‘ *Quotidian* Fever.’

9. ‘ The *continued periodic Tertian*  
 ‘ is likewise a Fault in the Quality of  
 ‘ the Blood, being rendred less *Fluxile*,  
 ‘ through the Means of a certain *Len-*  
 ‘ *tour*, &c.

10. ‘ The *continued periodic Quartan*,  
 is also a Fault in the Quality of the same  
 Fluid, not *Fluxile*, but by Means of a  
 certain *Lentour*, &c.

11. ‘ The *malignant*, in like Manner,  
 ‘ is from a faulty Quality owing to a pe-  
 ‘ culiar *Lentour*, moving up and down  
 ‘ therein, and therewith fermenting, when  
 ‘ sometimes one, at others, some other  
 ‘ Parts are obstructed.

12. ‘ The

12. ' The *Plague* it self is a vitiated  
' Quality also in the same Fluid, where,  
' by a certain *Lentour* moving about, fer-  
' menting and perspirable, some subtil  
' Particles are enabled to penetrate the  
' Bodies of others, and contaminate the  
' Blood of these in like Manner as those  
' they perspire from, so that many are  
' thereby destroy'd.

13. ' *Symptomatic Fevers* are of the  
' same Origine, and Production of the  
' foregoing; each depending on a viscid  
' or lentous Humour in the Blood, or as  
' in the Case of *Worms*, from the Mo-  
' tion thereof vitiated: That is, as oft  
' as the *Stimulus* thereby occasioned, is  
' able to produce the Symptoms conco-  
' mitant to such Fever: Upon which Ac-  
' count these *secondary* Fevers are reck-  
' on'd under the same *Genus* with the  
' foregoing, already described, having  
' nothing to Difference them, at least  
' essentially therefrom.

14. ' The Fever of the *Small Pox* is  
' a Fault also in the Quality of the Blood,  
2 , which



‘ which being dissolved, becomes partly  
 ‘ *Lentous*, and partly *Liquid*, whence a-  
 ‘ riseth the whole series of Affections  
 ‘ above declared; and from whence is  
 ‘ constituted this particular Fever, going  
 ‘ under the Appellation of *Variolous*.

‘ Now since there is no Fever given,  
 ‘ besides these already described, or if  
 ‘ there was, or could be given, but what  
 ‘ may be reduced thereto, we infer that  
 ‘ each of them severally, is a Fault in  
 ‘ the Blood, its Motion, Quantity, or  
 ‘ Quality; or that a Fever it self is no-  
 ‘ thing else but this very Fault offend-  
 ‘ ing one of these three Ways, or ac-  
 ‘ cordingly as few or more of them  
 ‘ are concern’d therein, some, or all.

*Q. E. D.*

Lastly a Word or two of his antecede-  
 dent Causes of these Fevers.

‘ Whatever goes before every true *E-*  
 ‘ *phemera*, will some way vitiate the Mo-  
 ‘ tion of the Blood; of which kind par-  
 ‘ ticularly are Passions of the Mind, pre-  
 ‘ ternatural Discharges, too great or vio-  
 ‘ lent

‘ lent Exercise, Hunger and Thirst, a  
 ‘ hot Air, Perspiration check’d by cold;  
 ‘ so that this Fever is only a Fault in the  
 ‘ Motion, Quantity or Quality of the  
 ‘ Blood, one or all, of one Day’s conti-  
 ‘ nuance, arising from the recited Occa-  
 ‘ sions, as an *Ephemera* of more days than  
 ‘ one is the same Fault, protracted only  
 ‘ to a longer Space.

‘ Again, whatever precedes the simple  
 ‘ *Synochus* or *continent* Fever, may vi-  
 ‘ tiate the Motion, Quantity or Quality  
 ‘ of the Blood, and from such Vice will  
 ‘ necessarily ensue all which is conjoyn’d  
 ‘ to either, or follows after; hence then  
 ‘ the simple *Synochus* is a Fault in the  
 ‘ Motion, Quantity or Quality of the  
 ‘ Blood, either, or all, arising from the  
 ‘ same Causes, as the legitimate *Ephemera*,  
 ‘ but somewhat more powerful, and of  
 ‘ longer Continuance; whilst the *Conti-*  
 ‘ *nent* is also the same Vice, but has yet  
 ‘ a more powerful Cause than the simple  
 ‘ *Synochus*, to bring the same into act.

‘ Farther, whatever goes before the

‘ Cau-

‘ *Causus* or burning Fever, vitiates also  
 ‘ the Motion, Quantity or Quality of  
 ‘ the same Fluid; and all whatever is con-  
 ‘ joyn’d, or succeeds thereto, ariseth from  
 ‘ the like Causes; so that it is plain, that  
 ‘ the *Causus* having no Periods, may be  
 ‘ refer’d to an *Ephmera* of more Days,  
 ‘ and is the most intense of all the rest;  
 ‘ arising however from the same Causes,  
 ‘ acting in a more intense Degree, produce-  
 ‘ able also by as many Ways as the rest.

‘ To conclude, whatever so vitiates  
 ‘ the Qualities of the Blood, as to kin-  
 ‘ dle a greater Heat and Dryness than is  
 ‘ natural, and derive the same into the  
 ‘ Habit of the Body, will by its continu-  
 ‘ ance bring on a *hectic* Fever, which  
 ‘ said Fever has its Residence in the said  
 ‘ Habit, and is no other than a preter-  
 ‘ natural Heat and Dryness of the Blood,  
 ‘ affecting the same, without Change or  
 ‘ Alteration, having no other Cause to  
 ‘ constitute its Essence than the fore-  
 ‘ going.’ <sup>b</sup>

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<sup>b</sup> Vid. Bellini Propos. de Feb.



I have given you this tedious Account of *Definitions* and *Propositions* of these two great Men: The last of which has been accounted as an *Oracle* by some, and wonderfully esteem'd, as having reduced *Fevers* by *mathematical Problems*, to a certain Rule: That you might be enabl'd, if unacquainted with their Writings, to make a Judgment, what real Advantage, (as I have observed of the foregoing *Definitions*) is to be gather'd, or which way the Cure may be promoted thereby.

I must own that there are several also of these latter, which seem beneath so learned an Author to have obtruded upon us for Demonstration, unless we could allow of many Things, which are *gratis dicta*, for such.

There is indeed much Stir about a *Lentour* in the Blood, sometimes more, sometimes less, and at others, not at all *fluxile*, in which is placed its only Fault in Quality; but how or which Way the same gives Rise to the several Species of

F

Fevers,

Fevers, or can produce the diverse *Phænomena* of each, is so far from being proved, at least in my Opinion, that it cannot so much as be imagin'd upon such Foundation: Yet this, with *Quantity* and *Motion* encreased or diminish'd, are the *Triumvirate*, it should seem, that preside in all *Fevers*.

'Tis granted that this *Lentour* may be thicker or thinner, moveable or fix'd: But why, in one, it produces *Coma Somnolentum*, in an other *Vigil*; in one *Languor* and *Deliquium*, in an other *Fury* and *Orgasm*, with encreased Strength; in one a constipated Belly, in another violent Purging; in one a white and a moist Tongue, in another a dry, black and scabrous; Why, in one, there is thrown forth a Pustulary, whether *miliary*, or *variolous* Eruption; in another the *Rubeolæ*, *Petechiæ*, or the simple *raschy* Efflorescence, either *Morbillous*, *Erysipelatous* or *Scarlatine*; How these, I say, with an hundred others, specifically diverse Appearances, in Fevers, are recon-

reconcilable to the more or less Fluxillity of a simple *Lentour*, is hard to conceive; nor can I persuade my self, but that the true and real Cause of most of these *Phænomena*, as well as the *modus* of Nature, in preparing and fitting the Matter of the Disease, to be thrown forth, will ever be hidden from us. We may, 'tis true, perplex our selves, to find out her Way of working, but how often does she disappoint us, in moving a direct contrary one, to that which Art was intending to impose upon her? How often does she ease her self by Sweats, which we were never able to force out: How oft by Vomit or by Stools? How frequently by Spit, or by some *Abscess* unexpected, unforeseen? In a Word, how common is it for her to extricate her self, or get disentangled from a Weight, we thought was unsurmountable; as at other Times, we see her forced to lye down, and vanquish'd, when we believ'd she had got the Victory, and that the Danger was now past.



But lest I should seem trifling also and tirefome, by prosecuting these Remarks, I must only desire you, after all that I have here quoted, to observe whether the *Praxis* of these Gentlemen is taken from their *Theorems*; or in what it differs from others? If so, whether their Success in curing Fevers by *Algebra*, *Geometry*, *Arithmetic*, &c. has exceeded that plain Method, which was taken by our honest *Sydenham*, from *Observation* only, without Regard to these? I dare say, if you look over the *Materia Medica* of Dr. *Pitcairn*, Master *Boerhaave*, or any other who have made the same Publick; you will find none better suited to answer the medical Intention, than those of that very heedful Physician, who had nothing more in View than how to relieve oppressed Nature, in such way as she seemed of her self to direct, by some certain, but faint *Overtures*, and such means as a settled Practice, and multiply'd *Experience*, had warranted for the safest: By quitting where-  
of,

of, and running upon *physico-mechanical Problems*, laid down in the way above-mention'd, I know many dangerous Mistakes are daily committed, by such as have not duly weigh'd them, nor rightly understood them.

Thus one tells us, that in every Fever the Blood must be drawn off in a large Quantity; the following are his own Words. \*

' The first Thing incumbent upon a  
' Physician in Fevers, is to let out a consi-  
' derable Quantity of Blood, in order  
' to remove the Cause of the same, which  
' is founded (*for you see he cites his*  
' *Voucher*) on the fifth and sixth Propo-  
' sition of *Bellini de Feb.* in these Words,  
*Vena in omni morbo est secanda, in quo*  
*minuenda quantitas, aut augenda veloci-*  
*tas, aut refrigerandum, aut humectan-*  
*dum, aut aliquid adhærens vasis dimoven-*  
*dum, aut abripiendum;* he might have  
added surely, *aut aliud aliquid agendum.*

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‡ See Preface to the New Theory of Fevers.

‘ A second tells us, that the Blood being  
‘ at these times too much rarify’d, what-  
‘ ever takes off the Rarefaction, (and no-  
‘ thing can do this so speedily as Bleeding)  
‘ cures the Fever of what kind soever.

‘ But a third says, the Blood divides  
‘ too fast at such Times, by which its  
‘ *electrical Attraction* is weakned; and  
‘ therefore Bleeding, as destroying the  
‘ Medium between the *centripetal* and  
‘ the *centrifugal* Parts, must be dreaded  
‘ above all Things, as every Thing that  
‘ raises or depresses them above or be-  
‘ neath the *Balance*.

‘ A fourth, on the other Side, again  
‘ crys out, that the Blood in every Fever  
‘ is apt to run into *Cohesion*, and that  
‘ these viscid Parts are best removed by  
‘ *Phlebotomy* or *Venesection*; after which  
‘ you must get acquainted with Re-  
‘ medies to break the remaining *Len-*  
‘ *tor*, dig down the Obstruction of the  
‘ Glands, and drive forwards the Hu-  
‘ mours impacted in the smaller Canals,  
‘ this being the true *mechanic Cure* of  
‘ Fevers.’

To



To this purpose, one of them has proposed *Steel Medicines*, another *Mercurial*, as the most powerful glandular Detergents; but then wisely considering the Heat, and Disturbance given thereby to the Blood, by which the Fever, at least during some time, would be increased, he dissuades the Experiment: Whilst another has proposed a *mercurial Salivation* in the worst kind of Fevers; but for the like Reason, *viz.* lest the Patient should dye in the way to his Cure, or before the Salivation could be raised, as wisely forbids the same.

So strangely are Men of strong Judgment and clear Reasoning, oftentimes bewildred, especially when their Heads are turn'd this Way, or when they forsake *Nature*, for the sake of *mechanic Principles* in Physick, or *mathematical Problems*; which however contain little more than an *Hypothesis*, and that often of dangerous Consequence, terminating in useless *Theory* or Speculation: And surely, till we come to change this kind

of *studying Physick*, as it is called, for the *study of Diseases*, and their natural Cure, we shall study to little Purpose: For the more we deflect from *Nature* and her Operations, laying aside *Observation*, or building upon *Theorems* of any kind, the more likely shall we be to destroy our Patients. Had you but seen the Library of *Alkalinus*, you might have known his Opinion, that not many Books, but much Business must complete a Physician: For truly, it was a settled Maxim with him, that the more of these a young Physician looks over, unless he is very careful in their Choice, the more sick People he will be sure to kill; and that a good Play or a Romance was better than any of them: But I can by no Means come up to this very supine and indolent Man's Thoughts herein; for doubtless without some Pains taken this way, or consulting those who have gone before us, a young Man's Judgment can never be well grounded: It must be unstable, nor can he ever satisfy himself,

or

or others, in what he is going about, or what he has to encounter, till he has made a sufficient number of Observations himself, Nature so often shifting from one Appearance to another: The Difficulty 'is in your choice of Guides; for 'tis our great Misfortune, that those Gentlemen who are able to do most this way, are for the most part silent; and the writing Task falls chiefly to the *Theorists*, who being big with some *Hypothesis*, are impatient till they are delivered thereof, or to the *mercenary* Scribes, who write for their own and their Booksellers Profit, rather than the Readers: How else surely has it fallen out, that for almost a Century past, *France* can boast but of one *Riverius*, and *England* but of one *Sydenham*? I mean as Compilers of a general Body of Physick, truly serviceable or useful to the practical Physician; by no Means derogating at the same Time from many others, who have learnedly and solidly discuss some particular Parts thereof, with which it is convenient you should



should be acquainted. For tho' a fortunate *Genius*, with an uncommon Sagacity in the *medical Prediction*, without trouble of reading Books, procur'd to the Person we but now mentioned, great Wealth as well as Reputation; yet every one, you know, is not born to such Fortune, nor is it half so material whether you die a *rich* one, as an *honest* Physician, or a *good Man*.

I hope now, from what I have here alledg'd, to take off any Gentleman's Resentment against me, as an Enemy to Learning, in which, how meanly soever qualify'd my self, no Man has a greater Value for the same, even for such *mathematical Enquiries* as will enable us to reason rightly, or upon certain Principles, about such physical Appearances in human Bodies, that the Subject of our Enquiry is truly capable of, but which this of *Fevers*, I fear is not, nor ever will, as to many of the *Phænomena* occurring daily to us in our Practice.

I can

I can believe as much of the *Machinery* as any of them ; that the Bodies of all Animals, together with our own, are form'd by *mechanic Rules*, subject to such Laws ; and that all the Disorders happening therein, as well to the *Solid* as the *Fluid* Parts thereof, are to be rectify'd thereby, if we knew how. And when I have seen one of these notable *Mechanicians*, make me but a *Fly*, or put Life into any other *Automaton*, how despicable soever, I shall own, when the same is sick, or which is all one, disorder'd in any of its *Machinulae*, or other the hidden, and to me, imperceptible Springs thereof, (whether the same has happen'd to the *Solids contracted or relaxed above or beneath the Balance or Equilibrium* appointed them, or by Means of the *Fluids running into Cohesion, and stopping at some Angle of Incidence*) that he will presently discover the Defect, and rectify it, with as much ease as the Watchmaker does those in a Piece of his own Work ; but till then,

I dare

I dare say you will pardon me, whatever they may do, if I suspend my Thoughts, or deliver them in this Way, that the supreme Being, who presided not only in the *cosmical Mechanism*, but at the forming all others therein, whether animate or inanimate, is only able to reduce Medicine in all its Parts, under these Principles: He who is acquainted with the *Primordia* or first Seeds of Diseases, before they come into act and produce Symptoms, by which only we can know them, and then too often but by guess: He, I say, that by an all-seeing Eye, and infinite Understanding, can at once survey the whole Machine, and view how his Handmaid *Nature* is at work, is the only *mathematical Physician*; and there is no Part of the Movement, whether relating to the *Hydraulic, Pneumatic*, or any other the *arithmetical* or *geometrical* Properties thereof, but he can instantly see through, and no one else.

Whether it derives much Honour to some, I will not say, who, tho' their Writings



rings are full of these Terms, *Mechanism*, *mechanic Laws*, *settled and established Course of Nature*, and the like Phrases; yet, as the honourable Mr. Boyle<sup>d</sup> observes, whoever takes Notice of the Mode of their Expression, (at least many of them) would be induced to think, that the *Natura naturata*, and not the *Naturans*, took up the chief Place in their Thoughts, or that these Laws were establish'd somehow or other, without a *Lawgiver* to appoint or direct them; so that there is less wonder, that to the Disgrace of both Professions, the *tres Mathematici* have been reckon'd with the *tres Medici*, as to their Principles of another Kind: But this being foreign to us at this Time, however to them, may seem a Deviation; and yet I cannot leave it without this farther Mark of Admiration, that *Physicians*, who of all Peo-

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<sup>d</sup> Enquiry into the vulgarly received Notion of Nature.

ple upon the Earth, by the anatomical Inspection of human Bodies, where they see each Organ so stupendously framed, and so admirably fitted to their several Uses, have the greatest Reason to be convinc'd of the infinite Wisdom of the great Δημιουργός, as the *Mathematician* from his Knowledge of the exact Symmetry and geometrical Proportion thereof, together with that of the celestial Bodies, falling under his Inspection, of his infinite Power, should yet be some of them the greatest *Scepticks*, to call them by no harsher Names: But so it happens, thro' the Force of Custom, or prevalency of Habit, that like other loose principled Persons, they overlook the Supreme Architect, and terminate all in what they call *Nature*, simple *Nature*, whilst the other Gentlemen are so absorpt as it were in Matter, that they can have no Idea of *Incorporeity*, *Immateriality*, or *Immortality*: These being *metaphysical*, and belonging to another Science, are out of their *Creed*, as not admitting that

that kind of Certainty they pretend to; altho' many Properties, even of Bodies themselves, such, particularly, as the common Cement or *Vinculum*, which holds their Parts together, is as hard to be come at, as the Knowledge of *angelic Beings*: So that the overlooking these important Truths, cannot surely proceed so much from the want of Thought, since none think more than Mathematicians, as that of due Reflection; for doubtless it cannot be overmuch Wisdom that has made them thus mad, nor can they be so conceited as to believe there is no other than their own; tho' I know it will be hard to persuade them that theirs, like the rest of the World's, is *Foolishness*: But lest by some of these, I should be thought preaching, which I own belongs not to my Province, a Mode of Discourse they are less accustomed to, 'tis time, perhaps, *ut manum de his, ex Tabula*. So that resuming our Subject, I will now endeavour to set this Affair in a better Light, and doubt not to shew,



shew, that after much Harangue on the Necessity and Usefulness of this Kind of Knowledge, to a practical Physician, they tacitly give up the Argument themselves, in owning, after much *Ambages* of Words, that it must be *Experience* which can enable us not only to foretel the Issue of the Disease, but the Effect also of the Remedy administer'd; and that where we cannot have sufficient *Data* to go upon, all Argumentation of this Kind is but Amusement, which we shall endeavour to make good from a late Proeme of a teaching *Phylomath.* to his *Principles of Physick*,<sup>c</sup> running thus,

‘ Since the Animal Body is a *Machine*,  
 ‘ and *Diseases* nothing else but its parti-  
 ‘ cular Irregularities, Defects and Disor-  
 ‘ ders, a blind Man might as well pre-  
 ‘ tend to regulate a Piece of Clock-

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<sup>c</sup> See *Morgan's* Introduction to his *Philosophic Principles of Physick*.

' Work, or a deaf Man to tune an Or-  
 ' gan, as one ignorant of *Mathematics*,  
 ' and *Mechanics*, to cure Diseases, without  
 ' understanding the natural Organisation,  
 ' Structure and Operations of the *Machine*,  
 ' which he undertakes to regulate : And  
 ' as there are two Things necessary to  
 ' constitute a good Philosopher, name-  
 ' ly, a just Acquaintance with the *Phæno-*  
 ' *mena* of Nature, grounded upon ac-  
 ' curate Observations and Experiments,  
 ' and a competent Skill in *Arithmetic*,  
 ' *Geometry* and *Algebra*, to enable him  
 ' to reduce the Forces and Operations  
 ' of Bodies to a *Calculus*, in order to  
 ' find out the Adequation and Propor-  
 ' tion between the natural Causes and  
 ' their Effects; so the like *mathematical*  
 ' and *mechanical* Reasoning, join'd with  
 ' the *History of Diseases*, their Symp-  
 ' toms and Cure, drawn from *Expe-*  
 ' *rience*, are both necessary in *Physicians*,  
 ' and one without the other is altoge-  
 ' ther insufficient.

'Tis a little surprizing therefore, to hear some Gentlemen of the Faculey, declaim against *mathematical* and *mechanical Theorems, in re Medica*, since this is in effect, to maintain that Medicine is grounded upon no Principle at all; that if Diseases are cur'd, it must be by chance; and that consequently there is no Difference but that of a *Diploma*, between a *Physician* and a *Quack*, (*who, by the Way, is seldom in want of that, even from some of our own Universities.*) 'Tis evident to all Experience, that new Species of Diseases, or new Symptoms, attending the same Diseases, daily arise, and offer themselves in the Practice of every Physician, in which the History of Diseases can be of little Use (*and I am sure mathematical Problems of much less*) and in this Case, where Experience fails, as it will in one thousand Instances, every one, how much soever he may declaim against *Theories*, recurs to his own, such as it is, true or false,



' false, right or wrong; and according-  
 ' ly attempts the Cure, at least for  
 ' the Experiment's Sake, and the Patient  
 ' often pays dear (*tho' perhaps he may*  
*come off cheaper than when tied to a*  
*Proposition, a la mode Mathesis*) for  
 ' what the Dr. decries, only because he  
 ' does not understand: So that a mode-  
 ' rate Skill in this Science, and a tole-  
 ' rable Acquaintance with the *mechani-*  
*cal Powers*, begin to be reckon'd a  
 ' necessary Qualification (*if not for a*  
*Teacher*) for one who would make a  
 ' Figure (*do you mind him*) in his Pro-  
 ' fession, and 'tis to be hop'd, that this  
 ' in time, will come to be allow'd the  
 ' true *Characteristic* of a reasonable Phy-  
 ' sician, (i. e. *a talking rather than a*  
*practical one*) as distinguish'd from an  
 ' *Empiric*; and indeed, since it is the Busi-  
 ' nesses of the former to assist Nature in  
 ' her Operations under the most nice  
 ' and difficult Circumstances, it is im-  
 ' possible he should acquit himself here-  
 ' in with Satisfaction and Success, or

‘ act otherwise than at blind random, if  
‘ he has not the Skill of applying, as  
‘ Occasion serves, *mathematical Quan-*  
‘ *tities* and Proportions, to the *mecha-*  
‘ *nical Powers*, upon which all the Laws  
‘ of the animal Oeconomy, with the  
‘ Effects and Consequents of Motion,  
‘ in the mutual Action and Re-action of  
‘ Bodies, entirely depend.’

Before I proceed farther with this blustering Gentleman, and his bold Advances, give me leave to make some short and modest Remarks upon what he has deliver’d.

We have already own’d the Body of Man to be form’d *mechanically*, or in our Author’s Words, to be an *Animal Machine*: And we think it necessary that every one, who sets about the rectifying its Disorders, ought to be well acquainted with the Structure thereof, which is gain’d only by anatomical Dissection, or a just Inspection of its Parts: But since the nicest Scrutiny we can make, will discover nothing to us of  
the

the Seeds of Diseases, nor of Nature's Process in encountring with the same, unless from what is past; so a diligent Observation thereof, made by a sound Judgment, together with a suitable Experience of what has best succeeded at such Times, or under the like Appearance, we believe the most necessary to a practical Physician; being by the one, enabled to form Diagnostic Signs, by the other the Prognostic, as well as Cure: But for any Man to tell us, that unless we can apply *mathematical Quantities* and *Proportions*, to *mechanic Powers*, and reduce the Forces and Operations of Bodies to an exact *Calculus*, in order to find out the *Adequation* and Proportion between *natural Causes* and their Effects (which is the sole Privilege of him that made them) we cannot acquit ourselves with Success, but must act at random, is both disingenious and disingenuous.

'Tis true, he owns, that to these must be added the *History of Diseases*, their



Symptoms and Cure, drawn from *Experience*, not from *Arithmetic*, *Geometry* or *Algebra*, which we deny to be those necessary Qualifications he pretends to, as to the Cure of all Diseases.

If to this, it should be answer'd, what Principles must we go upon, or how must we distinguish a *Physician* from a meer *Empiric*? I reply, we have the Principles of Reason, which when confirm'd by *Observation* and *Experience*, are all we can pretend to, or ever shall obtain, especially in the Cure of *Fevers*; all others we must renounce, and so must he, notwithstanding his Attainments in these Sciences: But if he thinks to acquit himself with the greater Reputation, he may, (if he can) persuade the Sick that he was recover'd, by adjusting *mathematical Quantities* to *mechanic Powers*; or, as a Person I could name to you, who first weighing the Poison of the Disease, in a balance turning with the thousandth Part of a grain Weight, and squar'd his Purge by the Strength of his Patient's

Con-

Constitution, never fails (if you can believe) to carry off the same, with the greatest Pleasure, and all imaginable Safety, whilst he that knows not how to adjust the Antidote in this Manner, to the Venom of the Disease, he would have you imagine, knows not how rightly to help you. And it is by this Principle of right Reasoning from *Observation* and *Experience*, back'd with a true Knowledge of the Structure of the Parts, not from any *arithmetical Calculi*, of which the *Phænomena* in Fevers are entirely incapable, that we distinguish a *Physician* from a *Quack*, who being ignorant of the Nature and Seat of the Disease, prescribes his Medicine, as our Author says, at random.

But tracing this *Phylomath* a little farther, <sup>f</sup> we shall presently see, if he comes not to an Acknowledgment, that ours are the soundest *Principles*, after

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<sup>f</sup> Idem Ibidem.

all this babble of *Quantities* and *Numbers*,  
at least the safest in which we can confide.

‘Tis plain, saith he, that the Names  
of Diseases, under their common Ac-  
ception, are affixt, not to their real  
internal Constitution, or morbid State  
it self, but to the complication of Sym-  
ptoms, or outward sensible Appearances :  
which complication of Symptoms joyn’d  
together under a common Name, con-  
stitutes the *complex Idea* or nominal  
Essence of this, or the other particular  
Sort or Species of Diseases.

Thus when the biliary Ducts or Pipes,  
which convey the *Bile* from the *Liver*  
to the *Intestines* are obstructed, the con-  
sequent Symptoms, such as the *Yel-*  
*lowness*, the *hard white Stools*, the *Cos-*  
*tiveness*, the *thick turbid Urine*, with  
the other Symptoms usually attending  
the Disease, being joyned together, un-  
der a common Name and complex Idea,  
is called the *Jaundice* ; which Disease  
would pass under the same Name, and  
admit of the same Cure, tho’ the Cause  
of



of it, or the Obstruction of the biliary  
 Pipes, should be absolutely unknown,  
 or never once thought of: but then  
 'tis plain in this Case, that the Obstruc-  
 tion of the *Bile* is strictly and properly  
 the Disease; and the complication of  
 Symptoms to which the Name is af-  
 fixed in common Acceptation, are only  
 the Effects and Consequents of it. And  
 after the same Manner, any original  
 proper Disease, as it respects the in-  
 ternal State and Disposition of the Or-  
 gans and Fluids, may be consider'd as  
 the Cause of the consequent Symp-  
 toms: And this Method of reasoning  
 from the Effects to the Cause, that is  
 from the Symptoms given to find out  
 the internal real and proper Disease, is  
 of such Consequence, that a Physician  
 can make no rational Judgment with-  
 out it. 'Tis this Capacity and Skill of  
 Reasoning from the Symptom to the  
 internal Original and proper Disease,  
 that distinguishes a *Physician* from a  
*Quack* or ignorant Pretender; and that  
 renders

renders his Judgment preferable to that  
 of a *Nurse*, a *Midwife* or a *Country*  
*Farmer*, who might chance by *Recipes*  
 to cure a *Faundice*, or any other Dis-  
 ease, without knowing what it is, or  
 from whence its Symptoms arise.

I have instanced here in a *Faundice*,  
 being a popular Disease, and commonly  
 known; but what has been said, may  
 be equally apply'd to a *Fever*, a *Dropsy*,  
 or any other Disease. 'Tis therefore a  
 right Knowledge of the *animal Machine*,  
 and a just reasoning thereupon from  
 Effects to their Causes, from the out-  
 ward sensible Appearances to their in-  
 ternal and more remote Originals,  
 Sources or Fountains, that can alone  
 qualify a Physician to make such Judg-  
 ment of Diseases, as must secure his  
 Success, and justify his Practice.'

But, pray Sir, after all the Elocution,  
 or Fencing with fine Words, What is  
 this to the adjusting *mathematic Quantities*  
 to *mechanic Powers*? Or what  
 that he asserts herein, which we deny! I  
 have

have already told you, that a Physician is throughly to acquaint himself with the Structure of the Body, as well in the State of Sickneſs, as of Health; that he is to be ſedulous in obſerving how the Parts are alter'd by ſuch Sickneſs; what Symptoms attend upon ſuch and ſuch Diſeaſes, as well as ſuch particular Parts diſeaſed, with their uſual Conſequences; by which, when the like ſhall again happen, he may be prepar'd as well from *Diagnostic* Signs as *Prognostic*, to pronounce what the Diſeaſe is, and how like to determine. Laſtly, I have told you, that from *Experience* of the Succeſs enſuing this or the other Method, under the like Appearances, he is farther enabled to proſecute the Cure.

To inſtance in the ſame Diſtemper, here given as a Specimen, by our Author, the *Jaundice*, and that in our own Way: Is it not by anatomical Diſſection, and Inſpection of Bodies deceas'd by Means of this Diſtemper, that we diſcover the Liver oftentimes *Schirrous*, eſpecially when the



the same was confirm'd, by which the bilious Juice, not being secerned from its glandules, regurgitates into the Blood, and in its Circuit tinges the whole Surface of the Body, more remarkably conspicuous on the *Tunica adnata* or white of the Eye; or being separated, yet stopt by some chrystalised Salts in its excretory Ducts; particularly that which empties it self into the *Duodenum*, by which the same Effect is brought about, with excruciating Pains attending the said Obstruction! Do we not hence observe, that the *intestinal Faces*, no longer ting'd thereby, contrary to their usual Colour, appear *Chilous*, or of a whitish Aspect; whilst the Urine of these People, now saturated beyond Measure with the bilious Salts, becomes *Lixivial*, loaden often with Contents of the same Complexion? Do we not farther observe the Sick thus labouring, to complain of *Faintness*, *Choleric Vomitings*, *Listlessness to Action*, *Itching all about his Body*? And lastly, do we not daily see the same  
com-

complicate with a Dropsy, when by Reason of rotten *Viscera*, discover'd also by Dissection, the Case is fatal? All this I say, we have from *Observation* of morbid Bodies, which afford us Signs both *Diagnostick* and *Prognostick* of the Disease in general. And is it not now from *Experience* only, that we have found some particular Remedies, whether Simple or Compound, most prevalent in removing these Obstructions, in order to the Cure, when the Distemper is not too many for us: Such I mean as the *Rad. Rhei. Curcumæ. Rub. Tinct. Chelydon*, the *Cort. Berber*, the *Fol. Centaur. Hyper. Croci*? Is it not from the same *Experience*, that we observe *Acids* also, at some times very prevalent in bridling the exorbitant Bile. Likewise *Lixivials*, particularly the *Sapo-Castil. sive venet.* than which there is certainly no better Remedy: Not forgetting *Chalybiats in puris Naturalibus*, or the *mineral Waters* therewith impregnated: the *Expression* of the *Millepeds*, with sundry others; and is not this Know-

ledge surely, these *Observations*, and these *Experiments*, sufficient to distinguish a *rational Physician* from a *Quack*, *Midwife*, or a *Country Farmer*, unless the Knowledge of *Windmills*, *Water-works*, *Gageing*, *Measuring*, *Numbers*, *Attraction*, *Repulsion*, *specific Gravity*, and what not, must be added to the same? Or does this Gentleman believe, that without these *Observations* and *Experiments*, he can cure a *Jaundice* better by the help of his *Arithmetic*, his *Algebra* or *geometrical Diagrams*? Much less I am sure will he be able to do this in *Fevers*, where *Observation* only, and *Experience* can assist us; no *Dissection* here, nor *Mechanism*, I fear (whatever he pretends to) will avail, where all is transacted by imperceptible Causes; nor can we come at the Knowledge of Effects, till they are produced or brought into Act: How then is *Nature* to be assisted, having no *Præcognita*, but from *Experience* and a diligent Attendance upon her Motions?

But



But why should I use farther Arguments, when you may see from what immediately follows the foregoing Flourish, he is forced to give up all, and to come into our Measures. For<sup>s</sup>

Such (saith he) is the inimitable Contrivance discover'd in the Structure and Constitution of an *animal Machine*, that more Fevers are prevented and restrain'd by the Cure and Providence of Nature, than are ever cured by Physicians: And since she is the original Standard and *Archetype* of Art, there is no need of any Thing else for the Information and Instruction of a good Physician, how to proceed in these Cases, but only to observe the Measures of Nature: How she obtains her End, when she is not somehow or other prevented, hinder'd and obstructed in her Work.

Again, tho' it is plain, that Fevers

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<sup>s</sup> Ibid. p. 214.

‘ may arise as well from *Repletion*, which  
‘ is the Cause of the greater Part, as *Ina-*  
‘ *nition*, yet are they very much mistaken  
‘ who think the Cure consists therefore  
‘ chiefly in *Depletion* or *Evacuation* :  
‘ Or who set about this Work at any  
‘ time, without regard to Nature’s Con-  
‘ duct : And indeed it is a Thing of the  
‘ greatest Consequence, carefully to ob-  
‘ serve and trace the several Steps and  
‘ Gradations of *Nature*, under any par-  
‘ ticular sort of *Fever*, in those who  
‘ recover, without Assistance from Art ;  
‘ and this I shall venture to say, that no  
‘ Physician can stand upon good Ground,  
‘ as to the Method he is to take, or the  
‘ Succours he is to afford in the cure  
‘ of any *Fever*, till he has diligently ob-  
‘ serv’d and inform’d himself, how Na-  
‘ ture cures the same *Fever*, when she  
‘ does the Work of her self.

‘ Farther, the word *Cause*, as apply’d to  
‘ *Diseases*, is sometimes taken for the  
‘ *antecedent* Occasions, by which they  
‘ are brought on, such as *an overheating*,  
‘ *taking*

' taking Cold, bad Air, Diet, immoderate  
 ' Evacuations, violent Passions, or any  
 ' Excess in the Non-naturals; all which  
 ' may help a Physician to form a right  
 ' Judgment, concerning the original mor-  
 ' bid Constitution, or the Disease it self;  
 ' but as the same antecedent occasional  
 ' Causes, produce different Effects at dif-  
 ' ferent Times, and in different Consti-  
 ' tutions; so 'tis the Symptoms alone, or  
 ' sensible Appearance of the Disease, that  
 ' can certainly be depended on in this  
 ' Case: And which being thus known  
 ' and found out by the Symptoms, with  
 ' the consequent Indications of Cure, the  
 ' next Enquiry is after the Remedy, or  
 ' such Medicines as will most effectually  
 ' answer the same general Indications:  
 ' And this is what can be only known  
 ' by *Experience*, and can never be ob-  
 ' tain'd by any Method of *Reasoning* à  
 ' *Priore*: No chymical Tortures, mi-  
 ' croscopical Inspections, or other Me-  
 ' thods of Tryal, without *Experience*,  
 ' could ever have inform'd us of the Pow-



ers and Properties of Medicines, or what Effects they will produce within us.

Lastly, to sum up all, we find him arriv'd to this Acknowledgment<sup>h</sup>; 'Where we cannot come at the necessary Data (*our present Case*) Philosophising is trifling (*and Mathematizing also*) and they who in such Cases, affect Eloquence and Ostentation, may amuse and surprise the Vulgar (*these are his own Words*) while they will certainly expose themselves to the just Ridicule and Contempt of the truly Learned (*as have done most of our mechanic Smatterers this way.*) Since the Powers and Properties of Medicines, or the Effects they are capable of producing within us, can be only known by *Experience*, a faithful Account of which, grounded upon just *Observation*, and a long continued impartial Trial (*the Things we accord with and contend for*) must cer-

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<sup>h</sup> *Idem* in his Preface to his Philosophical Principles.

certainly

‘ tainly be Matters of the greatest Con-  
 ‘ sequence; and if any one demands the  
 ‘ Reason hereof (*viz.* the Operation of  
 ‘ Medicines) I must own that I know  
 ‘ nothing of it, but from *Experience*,  
 ‘ which plainly evinces the Matter to be  
 ‘ so in fact.

To the like Purpose, we find another  
 of the same Class, <sup>i</sup> after the recital of  
 many Words, under the specious shew of  
 Argument, concludes thus in the whole.

‘ So far as a Person can consider a hu-  
 ‘ man Body as a *Machine*, and by the  
 ‘ known Laws of Motion, demonstrate  
 ‘ the Powers and Operations of its se-  
 ‘ veral Parts, (*how far this will reach*  
*let others judge*) ‘ so far may he with cer-  
 ‘ tainty know how to manage it, in or-  
 ‘ der to produce any Change therein;  
 ‘ that is, if he has proper Instruments,  
 ‘ and upon the same Principles under-  
 ‘ stands their Efficacy, and manner of Ap-

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<sup>i</sup> Quincy in his Introduction to his *Sanctorius*.

‘ plication; (*a great Difficulty this*) a  
‘ large Number indeed of the Instruments,  
‘ by which it is either injur’d or men-  
‘ ded, are so small as to render it impos-  
‘ sible, with strict certainty to determine  
‘ their Efficacy, because it is not possi-  
‘ ble exactly to assign their Bulk, Figure  
‘ and Motions; and therefore cannot  
‘ their manner of Working upon the *a-*  
‘ *nimal Fluids*, be positively known: the  
‘ seat of the Disorder may also, at some  
‘ times, lye so many Stages from the  
‘ first taking in of a Medicine, that if  
‘ at its first entrance into the Stomach,  
‘ its Properties were never so certainly  
‘ known; yet by the Actions of the se-  
‘ veral Parts upon it, which it passes  
‘ through, and the different Mixtures and  
‘ Strainers it meets with, by that Time  
‘ it gets to the scene of Action, its first  
‘ Properties may be quite destroy’d, and  
‘ new ones acquir’d, the Efficacy of which,  
‘ after so many Changes, can never be  
‘ determin’d.’

From



From all which, I think, Sir, you may plainly see how little Respect, in some Cafes, is to be paid to *Theorems* or *Propositions* of this *Kind*: Which tho' never so true in themselves, in regard to certain Portions of Matter, under a diverse Modification, or constituting specifically this, or the other particular Distemper, or Disorder in the *animal Machine*; yet will our Knowledge in the rectifying thereof be little advanced thereby, especially in those where we have nothing but *Observation* and *Experience* that can avail us.

‘ *Experience*, give me leave to say, in the Words of an honest Practitioner<sup>k</sup>,  
 ‘ which is our surest, if not only Guide,  
 ‘ by whose Laws and Rules, unless Physicians be exercised, it were better there  
 ‘ was no such Thing: For the Life of  
 ‘ Man is too much trifled with, when on  
 ‘ this Hand, *Empiricks* that are ignorant

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<sup>k</sup> Sydenham.

‘ of the History of Diseases, and the Me-  
‘ thod of Cure, set up only with Receipts;  
‘ And on the other, vain *Tatlers*, that  
‘ place all their hope in *Speculations*, (I  
‘ might I think add some modern *Pro-*  
‘ *positions* and as *useless Theories*) by  
‘ which more People are destroy’d than  
‘ would, if left to themselves, or Na-  
‘ ture’s Guidance; but that is Practice,  
‘ and that alone will help the Sick, which  
‘ draws its curative Indications from the  
‘ very *Phænomena* of the Diseases, and  
‘ confirms them by the same *Experience*,  
‘ by which the great *Hippocrates* obtain’d  
‘ his height: For indeed without *practi-*  
‘ *cal Observation*, that which seems at  
‘ first very reasonable, may perchance  
‘ prove nothing else than the shadow of  
‘ Reason, or a *Phantome*, that is mere  
‘ Opinion, and the oftner (*says the good*  
‘ *Man*) ‘ I converse with others, I am  
‘ the more confirm’d how dangerous it  
‘ is, even for the most acute, to rack  
‘ their Brains in the search of any Art or  
‘ *Science*, unless they constitute *Matter*  
‘ of

‘ *of Fact*, as Judge and Umpire of *Truth*  
‘ and *Falshood*.’

To let you farther into the Sentiments of this worthy Man, as well as to satisfy you, that it has not been, but upon the most mature Consideration, that I have taken up the same, as well from his, as the Example of that antient Father of Physick, he here quotes, I shall take the Liberty to recite those Words of his, which I never look over, but with the utmost Satisfaction, having so thorough a Conviction in my own Mind, of the great Truths they contain.

The Words of *Hippocrates* are to this purpose. ‘ Some *Physicians* and *Sophisters* give out, that it is impossible to know the *Art of Physick*, unless you know what *Man* is, and how he was first made and compacted : But I think that those Things which are said and written by such *Sophisters* and *Physicians*, of *Nature*, more properly belong to the Art of *Painting* than *Physick*.’



Now, if this were the Opinion of *Hippocrates*, with respect to the outward Lines or muscular Parts, together with some Passions, so remarkably conspicuous in those particularly of the Face, which could only fall under the Cognizance of the Painter and Statuary, and however useful to the Surgeon, of little service to the Practice of Physick: What can we think of his Thoughts, concerning the *animal Fluids*, or an over curious Scrutiny thereinto, in Order to qualify Physicians, for the better Performance of their Cures, upon which our Author thus comments!

‘ Now lest the Divine old Man should  
‘ be accounted erroneous, or *Empiricks*  
‘ seek a Cloak for their Ignorance from  
‘ this Place, I declare that according to  
‘ my best Thoughts about Practice (which  
‘ ought to be the Touchstone of the Professors of *Physick*;) suppose that it is  
‘ absolutely necessary that a Physician  
‘ should well understand the Structure  
‘ of a human Body, that he may be the  
‘ better

' better able to conceive and form true  
 ' Ideas of the Nature and Causes of some  
 ' Diseases: For he that is ignorant of  
 ' the Fabric of the *Reins*, and of the  
 ' Passages tending to the Bladder, can-  
 ' not guess whence those Symptoms arise  
 ' that proceed from the Stone in the  
 ' *Pelvis*, or thrust deep into the *Ureters*;  
 ' therefore such Knowledge of the hu-  
 ' man Body is absolutely necessary; and  
 ' he that has it not, must act blindfold  
 ' with some Diseases. This Knowledge  
 ' also is soon acquir'd, being found out  
 ' and attained by the Inspection of hu-  
 ' man Bodies dissected, by such even as  
 ' are not over sharp witted; but in *acute*  
 ' Diseases, which kind contain more than  
 ' two Thirds of the whole, and truly in  
 ' most *chronical* ones, it must be confess'd  
 ' there is some specific Propriety, which  
 ' no Contemplation deduced from this  
 ' sort of Speculation, can ever discover  
 ' to us.

' Wherefore that Men should not so  
 ' place the main of the Business on the  
 ' Dissec-

‘ Dissection of Carcasses, as if thereby  
‘ the medical Art must be rather pro-  
‘ moted, than by diligent Observation  
‘ of the natural *Phænomena*, and of such  
‘ Things as do good or hurt, is, I suppose,  
‘ what the good old Man would have  
‘ chiefly avoided in the foresaid Place ;  
‘ and that he does not despise or con-  
‘ temn the general Knowledge of the Fa-  
‘ brick of the human Body : And truly  
‘ so great and wise a Man, must needs  
‘ know that all the Discoveries that can  
‘ be made, cannot exceed this general  
‘ Knowledge ; for though by a diligent  
‘ Search in dissecting Bodies, the greater  
‘ Organs, which Nature uses in perform-  
‘ ing her Business, appear, and also some  
‘ Vessels through which the Juices are  
‘ transmitted, from these to other Parts ;  
‘ yet what is the original and primary  
‘ Cause of this Motion, the Eyes can-  
‘ not see, nor can the best Microscope  
‘ discover those small Passages through  
‘ which the *Chyle*, for Example, is strained  
‘ through the *Intestines* into the *chylife-*  
‘ *rons*



' rous Vessels, or by what Passages the Blood  
 ' it self passes from the Arteries into the  
 ' Veins. Moreover there are most innu-  
 ' merable fine Pores and Passages in the  
 ' wonderful frame of Man, which none  
 ' can so much as dream of, so rude and  
 ' unlearned, pardon the Expression, is our  
 ' Knowledge, and in a manner only con-  
 ' versant about the outside of Things, ri-  
 ' sing only to the τὸ ὅτι, or understand-  
 ' ing that they are so, but can by no  
 ' Means reach the Causes thereof: And  
 ' as *Hippocrates* blames those who waste  
 ' more Time in studying Curiosities in  
 ' *Anatomy*, than in practical Observa-  
 ' tions, or Nature it self: In like Man-  
 ' ner, any prudent Man in this Age, may  
 ' condemn such as think the Art of Phy-  
 ' sick can be no Way so well improv'd,  
 ' as by some new *chymical Inventions*, &c.  
 ' Whereas, he that rightly considers, will  
 ' perceive that the chief defect in the  
 ' Practice of Physick, does not proceed  
 ' from the want of Means to answer this  
 ' or that Intention; but because we do  
 ' not

‘ not rightly know what that Intention  
‘ is, which is to be answer’d; and truly  
‘ I am very certain, that nothing can so  
‘ much conduce to form the Judgment  
‘ right in this Matter, as an exact Obser-  
‘ vation of the natural *Phænomena* of  
‘ Diseases, and likewise of the *Juvantia*  
‘ & *Lædentia*; if these were diligently  
‘ compar’d one with the other, they  
‘ would shew the Nature of the Com-  
‘ plaint, and whence the curative Indi-  
‘ cations are to be taken, much better  
‘ and with more certainty, than directing  
‘ our Course to the Speculation of the  
‘ Nature of this, or that Principle of the  
‘ concremented Body, as by the Stars; for  
‘ the most exquisite Dissertations of this  
‘ Kind, are little more than *Metaphors*,  
‘ neatly deduced and set off, and which,  
‘ like others, founded on the *Imagina-*  
‘ *tion*, not on *Nature* it self, will vanish  
‘ and be worn out by Time: Whereas  
‘ the Judgment of *Nature*, built on the  
‘ verity of Things, will continue as long  
‘ as *Nature* it self.

But

‘ But tho’ *Hypotheses*, built on philo-  
 ‘ sophical Speculations, are altogether  
 ‘ vain, because as Man is endow’d with  
 ‘ Knowledge, whereby he can lay down  
 ‘ Principles, on which he may present-  
 ‘ ly raise a Superstructure; yet, if they  
 ‘ flow from Things done, and from  
 ‘ those Observations only, which prac-  
 ‘ tical and natural Appearances suggest;  
 ‘ these will remain firm and unshaken;  
 ‘ so that tho’ the Practice of Physic, if  
 ‘ you respect the Order of Writing, may  
 ‘ seem to arise from *Hypotheses*, yet  
 ‘ when solid and genuine, they must  
 ‘ owe their Original to Practice.

‘ For Example sake, in *Hysterick* Dis-  
 ‘ eases, I do not therefore use *Chalybi-*  
 ‘ *ats* and other Things that invigorate  
 ‘ the Blood, forbearing those which  
 ‘ evacuate, unless upon some Occasions,  
 ‘ but rather *Paregorics*; because I first  
 ‘ took it for granted, that the Disease  
 ‘ proceeded from the Animal Spirits  
 ‘ weaken’d and broken: But when the  
 ‘ constant Observation of practical Ap-  
 ‘ pearances,



‘pearances, had taught me that the giving  
‘of purging Medicines, always increas’d  
‘the Symptoms, and that Things contrary  
‘were wont to quiet the same, I  
‘took, I say, my *Hypothesis* from this  
‘and the other Observation of the natural  
‘*Phænomena*; so that the *Philosopher*,  
‘must here serve the *Empiric*; whereas,  
‘had I began with an *Hypothesis*, I had  
‘been equally as wise as he who goes about  
‘to build his House, without first laying a  
‘Foundation.’

To the same Purpose also hear *Baglivi*.

‘I observe it necessary to do this or  
‘that from *Experience* only, which has  
‘confirm’d this or the other Method to  
‘have succeeded best; for Instance, that  
‘in the Beginning of *Fevers*, we must  
‘not purge, since no wholesome *Crisis*  
‘is of a sudden, or the Matter as yet  
‘fitted for Evacuation; the like of sweating  
‘Remedies, too early administer’d,  
‘unless we were so happy as to be Masters  
‘of such (which also must be found  
‘by *Experience*) that at once were able

‘to

‘ to stifle the Disease, as the *Bark* does  
‘ the *Intermittent*, and the same found  
‘ also to answer, after many repeated  
‘ Trials. <sup>1</sup>

I would now hope, Sir, if not from my own Opinion, from what I have here collected of others, you may be convinc’d that every practical Physician is to take pure *Nature* for his Guide, or that he must be exceeding careful in his Observations of her several Dispositions and Tendencies, as also of the Success of his own Endeavours, to promote such as seem most likely to relieve her, and to check those which are exorbitant, or by which she is in Danger of being overfet.

These, I say, must be the *Principles* he must go upon, in such Cases, especially, where he can obtain no better (which are those doubtless of *Fevers*) or more certain on which to rely.

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<sup>1</sup> *Baglivi's Practice of Physick*, p. 320.

Nor do I mean hereby or from any thing I have said, that it is not proper for a Physician to study *Mathematicks* or *Mechanics*, by which his Judgment, in the Solution of medical Problems, may be better'd, or that he may satisfy himself by the same *Principles*, how such or such Appearances in the human Body are brought about and reconcilable to the settl'd Laws establish'd by its Maker; but that he presume not to make any such *physical Problems* or Deductions the Rule of his Prescription, in such Disorders thereof, as through their inscrutable Properties, however *mechanically* transacted by *Nature* her self, together with his limited Understanding, unable to unravel them, are incapable thereof; yet even here we may give him leave to talk *mechanically*, provided he practise by *Observation* and a well grounded *Experience*.

For did we rightly consider the Importance of Men's Lives, with which we are entrusted, we should not surely put  
the



the same upon the most uncertain *Calculus* of *Numbers* or *mathematic Theorems*, how curiously soever wrought by a philosophic Brain, neither yet upon any *Propositions* or *Diagrams*, which oftentimes have no other Basis than meer *Hypothesis*; nor, as is the Custom of some who are always in haste, when they should be most at leisure, call for the Pen and Ink, and write, as we say, off hand: But deliberate thoroughly upon each Case, and reflecting what we have observed of the like, at least, so far as Comparison may allow, propose our Remedy, diversifying, however, as Variation in Circumstances, or some differing Indications may require; for believe me, unless you do so, whatever others may assert, of the Insufficiency of *Observation*, without *mathematical Acquirements*, I will be bold to say, the poor Patient runs a greater Risque of his Life, and is at more Uncertainty under the Direction of his *Mechanician*, than the less accomplish'd this Way, but

more heedfully observing and experienced Practitioner : And I cannot but agree so far in the same Sentiment of a once eminent Gentleman of the Profession, <sup>m</sup> that a *Genius* rightly design'd (for I think *Physicians*, as well as *Poets* and *Painters*, should be so born) with a competent Knowledge of the learned Tongues, and suitable Acquaintance with the Structure of the Parts, will make a more safe and useful Practitioner, than the whole *Encyclopædia* thrust into a Head void of such *Genius*, will be able to produce.

One of these I have seen e're now, at a Stand, by the Bed-side of the Sick, through the Want of such *Observation* in the Distemper, unable to foresee, with the Help of all his *Algebraic* Acquirements, a fatal *Crisis* of a *Fever* just at hand, predicted by the Nurse, and quickly after confirm'd.

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<sup>m</sup> Sir R. — B. — r.

How vainly then do some of these inculcate to their Pupils, that the *Moments of a Fluid are a Rectangle under the Quantity of Matter, and the pressing Velocity*; or that *Moments are equal to a Rectangle under the Celerity and Quantity of Matter, at a Time when they ought to be apprised that the Matter of greatest Moment*, and indeed the Fundamental, is to have the chief Regard to the present Appearances and *Indications*; or laying aside all *Theorems*, to direct such Remedies, as upon their own constant *Observation* and repeated *Experiments*, they have found to answer the said *Indications*.

For, alas! what avails our Knowledge here, that *Fluids gravitate with a lateral Pressure, perpendicular to the Tangent of the Circle*; that the *Center of Gravity is a perpend to the incumbent Weight*? If whilst we are busied about these Fooleries (for they are no other at these Times) we overlook the weightiest Affair of all; or unless by *Tangents*



and *Diagrams*, we could save a dying Patient, which is now only attainable by proper *Cordials*, or other *Alexipharmics*, such as a languishing Pulse dictates, and oppress'd Nature calls for; and if our Minds are otherwise employ'd now, what do we else but sacrifice our Fellow-Citizens to *Numbers* or *Quantities*, perhaps mistaken by a wrong *Calculus*, or if true, yet foreign to our Purpose? What do we, I say, other than suffer our Patient to dye, not so much according to *Art*, as *learned Nonsense*; and then who knows not the *Center* of his *Gravity* to be the Grave? or indeed in what better condition is he, if under this Management, than was their great Master *Archimedes*, who whilst he was intent upon his *Circles* and *Diagrams*, was knock'd on the Head by a common Soldier, whom otherwise he had escap'd?

You will think, surely, by this time, I have said enough to convince any considerate Person, that however these Qualifications,

lifications, I mean *mechanical*, may help in the Explication of certain *Phænomena* in human Bodies, whether healthful or diseased, with more Satisfaction than by other Principles can be obtain'd; yet with Regard to our present Dissertation, *i. e.* about *Fevers*, they will stand him in no Service; I wish I could say they might be found useful in many others; for notwithstanding they promise great Matters, I find few Advances among their Owners, either in the Way of *Proposition*, *Axiome*, *Problem* or *Theorem*, in which they are all rightly agreed one with another, or in which some have not oppos'd the rest. If you will give your self the Trouble to peruse that elaborate Performance of *Michellotus*<sup>n</sup>, you will find what I here alledge, to be verify'd in an hundred Places; some of these I have taken the Pains to transcribe hither, with a Word or two Preliminary of their general Agreement, that the first *Principles* of

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<sup>n</sup> De Secretione Fluidorum.

natural Bodies, or their component Particles lie out of sight, and are not reducible to these Laws, at least by our finite Intellect.

For who (saith the Author now cited) that deserves the Name of a *Mechanician*, can be yet so void of Understanding, as to fix for certain *Principles*, upon the Size or Shape of Corpuscles entering the Composition of Bodies, whether *smooth, rough, round, angular, hooked, cubical or Hexagonal*, or hopes at any Time that he shall be able to explain *mechanically*, the hidden Causes or Reasons of Things, insensibly transacted in our Bodies, there being many *Problems*, both *physical* as well as *medical*, of such Nature, that (not like Questions simply *mathematical*) will not admit of definite or determinate Solutions?

*Bellini* himself ingenuously acknowledgeth, that he neither knew, or should be ever able to know the first Principles of Things, such as their Figures or Shapes, or the Figures of those Parts, entering  
their



*their Compositions.* Pitcairn also has as openly confest, that we could discover nothing more in Things corporeal, than their several Relations one with another, and their several Properties, by which they may be chang'd, or are changeable one by the other.

Thus far we have a general Concurrence; and how then do we look for Certainty in *physical* Matters, where the Principles we should go upon are confessedly veiled from our Senses, and imperceptible to the human Mind.

'Tis true, as *Leibnitius* has observ'd, we have a Multitude of Experiments, and if we knew rightly how to reason upon the same, many Discoveries might be made very useful, some to human Life; but then, saith he, we are scarce to expect geometrical Certainty, in many others more difficultly discust, relating to these Matters, not so much through the Want of Reasoning, as the Scarcity of Experiments and Observations, more especially the Defect of

*proper Data on which to found them.*

But I will now insert some particular Passages, quoted from our Author, and first in Page 18, I find him opposing the learned Dr. *Pitcairn*, in his Advance about the Motion of the Stomach, by which the Aliment is turned into *Chyle*, and thence transmuted into Blood: His Words run thus.

*Nescio qua falsa specie veri, deceptum fuisse Pitcairnum, &c.* and in regard to that of the Blood, with the Fluids thence separated, and passing their Canals, he assures us there can be no exact *Calculus* made for many Reasons there laid down; and that *Borellus, Bellini, Gulielmini*, with several others of the *Italian* Physicians, fell under great Mistakes in their Computations; *that they had pretermitted many Things, some they had not rightly animadverted, some imperfectly handled, and others falsely determin'd:* And how should it happen otherwise, where from one thousand unheeded Variations, the Thing it self is impracticable,  
and

and not to be made out by any *geometrical* or *mechanical* Method whatever.

The Comparison betwixt the *Fluid* of Blood in the Bodies of Animals, and the *Water* of *Rivers*, or the same poured out from a Vessel, as exemplify'd by one of these Gentlemen, he assures us will not hold; nor does it prove what *Bellini* would have us imagine thereof, p. 81, 82. Of the same erroneous Inference, he here charges our Country-Man *Cheyne*, in his appying the Schol. of Sir *Isaac Newton*, concerning the Motion of Bodies, to that of the same Fluid, through the arterial Conduits. And again, p. 92. That this Gentleman falls into a Mistake, when applying the same Scholium both to the *Cone*, *Concave* and *Convex*, then endeavouring to make it appear that the *Conus Truncatus* (there delineated) *among all of the same Base and Altitude, gives the least Resistance to the Blood flowing, &c.* for the Motion thereof not being equal, or of the same



same Tenure in the Arteries, that which he here sets down for Truth, is not so evident, but that it will stand in Want of Demonstration.

P. 93. In prosecuting this Subject of the Blood's Motion through the Arteries, he farther affirms, *there has no one yet been able to find out the Velocity of this Fluid, with any tolerable Exactness, through the Cavity of the Aorta, discourag'd by the Difficulty of the Matter itself, the Variety of attending Circumstances, and the insufficiency of Data, for such an Attempt.*

‘ The Force of Action and Re-action is  
‘ agreed on all Sides to be equal, and  
‘ therefore has been settled among the  
‘ Laws of Motion, by those great Mathematicians Sir Isaac Newton, Bernoulli, Leibnitius, Hermannus and sundry  
‘ others; whence many wonderful Things  
‘ have been discover'd and proved, with  
‘ respect to the *Mechanics, Statics, Hydraulics*: But I dare say, the Elasticity  
‘ of the great Artery, contributes nothing  
either

either to the Encrease or Diminution  
 of the foresaid Velocity of the Blood,  
 with its incessant Force and constant  
 Current passing through the same,  
 since the throwing forth of the Blood  
 from the Heart is not constant, the Com-  
 pression thereof against the same being  
 alternate, and the Force impelling not  
 given, neither yet the circulating Fluid,  
 like to that of the simple Element, *Wa-  
 ter*, or the *Parietes* or Sides of the *Arte-  
 ries*, analogous to artificial Tubes; there-  
 fore, I say, the Velocity of the *Blood*,  
 thus continually passing the Cavity of  
 the said *Artery*, cannot, like that of *Wa-  
 ter*, with a given Force driven through  
 its Pipes, be with any Certainty deter-  
 mined: For tho' the ingenious Dr.  
*Keil* would have it thought he had de-  
 cided this Controversy, who ever weighs  
 the Matter, will find this Gentleman  
 builds only upon two meer *Hypotheses*,  
 the one a *Calculus* of the Quantity of  
 the Blood, which in eighty Contractions  
 of the Heart, or the Space of one Mi-  
 nute,

' nute, is impell'd into the *Aorta*, the  
 ' other upon a geometrical Gage of the  
 ' *Diameter* of the Orifice of the said Vef-  
 ' sel, neglecting, in the mean Time, the Te-  
 ' nacity of the pereurrent Fluid, the rubs  
 ' and stops the Globules of the Blood may  
 ' meet with by the Sides and Curves of  
 ' the Vessels, with divers other Impedi-  
 ' ments to its said Force. So that however  
 ' he hath shew'd great Ingenuity in this  
 ' his Attempt, yet is it several Ways  
 ' faulty, and founded on uncertain and  
 ' precarious Principles, p. 103 to 105.

' Again, in taking the determinate Force  
 ' with which the Heart contracts to pro-  
 ' pel the Blood through all Parts of the  
 ' Body, he goes upon a *Proposition* of that  
 ' wonderful Man Sir I. N. which *Pro-*  
 ' *position*, notwithstanding, is absolutely  
 ' false, according to *Bernoulli*. The like  
 ' Mistake the famous *Hugens* was drawn  
 ' into, from the same Corollary of the  
 ' 36 Prop. of that great *Mathematician*,  
 ' which *Corollary* is the Basis of Dr. Keil's  
 ' third *Tentamen de investiganda vi Cordis*

' ad



*ad Sang. per Universum Corpus impellendum.*

P. 115. In computing the absolute Force of this Bowel the *Heart*, we find the like Discord among others, through their different Ways of *Calculation*. Thus *Borellus* makes the same equal but to *eight*, *Keil* to *eighty* Ounces; the former taking in such Part only as answers the Orifice of the *Aorta*, the other multiplying the eight Ounces by ten, the whole Force of the said Muscle being equivalent to ten times the said Orifice, encreases the same to *eighty*: The like Difference is to be observed on the same Account, *viz.* different Ways of reckoning among them, in Relation to the Force of the *Bladder*, the *Vesicula Seminales*, &c. of which see p. 118, 119.

P. 126, he takes Notice of an Experiment of that very modest and painstaking Gentleman this Way, Dr. *Jurin*, to measure the Motion and Quantity of Water running through a Cylinder, borrow'd

row'd from Sir I. N. His Words here follow in Relation thereto.

*Rem acu se tangere putat, quando fingit aquam, per Foramen in medio fundi vasis, delabi, instar Cataractæ, eam formam habentis quam depingit in figura sua decima sed tota demonstratio abit in Hypothesim.* P. 136. He remarks Pitcairn's Prop. that all Secretions are greater or less in Proportion to the *Diameters* of the secerning Vessels; which tho' true in *Hypothesis*, will by no Means hold in the *Theory* of Diseases, such as Fluxes, whether by Stool, Urine, Sweat, &c. When it may so happen, as that either may be encreas'd or diminish'd, without regard to these being any Ways changed; of which having given some manifest Examples, he concludes thus. *It would be useless to proceed farther in these Enquiries after the Motion and Quantity of Fluids running in equal Time, through whatever Outlets in Animal Bodies, especially Man, since the same, thro' the Scarcity of Experiments, and the Want*

*Want of sufficient Data, cannot with any Exactness be determin'd.*

P. 139. You will find he condemns *Bellini* of a gross Over-sight or Mistake in his Comparison of a Liquid flowing through a Tube, &c. contrary to the Principles of *Hydraulics*. *Bernoulli* being also of the same Opinion, that these *Problems* will not admit of an absolute Explanation, to any certainty; for that there are many Circumstances which may strangely alter the Case of what, at first View, seem'd capable of being establish'd upon these *Principles*.

At the same time he observes Dr. *Cheyne* to be out in his Account of the Structure of the *Glands*, and the fluid Secretion, which was taken from *Bellini*, and which he builds on, in his new Theory of Fevers, *Clarissimum* (inquit) *G. Cheyneum non recte determinasse Velocitatem liquidi effluentis, &c.*

P. 156. He acknowledgeth in general, that we have no less Reason to doubt the Truth and Certainty of many Things



Things we meet with in the Writings of *Mathematicians*, who have endeavour'd to apply *Geometry* to *Physicks*, than in those of other Physicians: There being many of their *Axioms* only probable, but very few, (however pretended so to be) that are truly demonstrated; give me leave to add, that there are some *Truths*, some Things *doubtful*, and others, tho' deliver'd for *Truths*, that are truly *false*.

But in farther Discourse on the glandular Texture, and the ways of Secretion, we find, saith he, no less Division and Uncertainty than in the rest: And how should it be otherwise in so abstruse a Point: Both *Bellini*, as well as *Keil*, ingenuously confessing that their Structure is not to be investigated, neither by Dissection, nor the most piercing Sight, but by Imagination only: And therefore, saith the former of these, *Si velis totam glandule fabricam penetrare, finge vitrum*, &c. and then afterwards, *Si hæc dentur, hanc vel non ab similem esse glandularum fabricam*.

And if this is not *gratis dictum*, or a *Petitio Principij*, surely nothing can; but as to the Affair of Secretion, the *Modus* is yet a Secret, and like many others, feigned only for the sake of Argument, or some new *Theory*: For having lay'd aside the antient *Ferments*, one of them says, they differ only according to the different *Cribræ* or *Sieves*, through which they are strained in their Passage, or the various configuration of the Pores; so that *circular* Orifices can only let out the *spherical* Particles: And so of the others. Which manner of Secretion Dr. *Pitcairn* has learnedly confuted, but substituted one in its Place, as liable to Exception, i. e. *that not the different Figures, but Magnitudes of the Figures or Pores, which are all circular, are the Causes of all the differing secerned Humours.*

Yet in this *Hypothesis*, as *Helvetius* ° has observed, what can hinder the smal-

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° Essay on the *Animal Oeconomy*.

ler Parts from entering the larger Orifices ? For in vain does he endeavour to remove this Inconvenience, by alledging that the Number of the *Conglobate* Glands, far exceeds that of the *Conglomerate*, so that he says the finer Fluids, which are always separated by the Glands of the first Sort, go off constantly in much greater Quantities than the gross ones, filtrated by the others.

Notwithstanding which it will still follow, that the finer Liquors must mix with the grosser in such Filtration; whence, as in one of the other, will arise an imperfection and irregularity in the said Secretions, than which nothing is more contrary to the very Order and Simplicity of the *animal Oeconomy*, which the Founder of this Opinion himself contends for.

How much better then were it to be wisht (in the Words of the same *Helvetius*) that this learned Gentleman (*Pitcairn*) who endeavours to explain the Art of Physick, by *mathematic Principles*,



*ples*, would have begun with a more exact Knowledge of the Structure of the Parts, and the several Springs belonging to the *Machine*: For in vain must we expect to find this in Books, which is not attainable, but by the frequent use of the Knife (*I wish it were always to be found this Way*) and repeated Dissection.

Dr. Keil, I observe, has another Way of solving the differing Secretions, which is that of *Attraction*, viz. *Similar*, and which he would have us to believe, is always strongest in those Parts which are nearest to the Heart; but there are so many rubs in the Way of this, both from *Reason* and *Experience*, that we justly fear with *Michellottus*, he will never be able to defend the same.

The last Way, I shall here observe of explaining different *Secretions*, is that of *Helvetius*,<sup>p</sup> agreeable to many others of

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<sup>p</sup> *Iam. Ibid.*

the *mechanic* Professors, viz. that *Liquors filtrate thro' some certain Strainers rather than others, because they find those fill'd with a Liquor homogeneous to their own*: Exemplify'd in a piece of Cloth dipt first in Oyl, which being after put into a Vessel containing a mixture of Oyl and Wine together, will let through only the first, and not suffer the last to go out: for the Gland it self being nothing else but a Complication of sanguinary and lymphatic Vessels, the last which arise from the other, are the Reservoir of the lymphatic Fluids: The third Sort which we call *Secretory*, taking their Origin from the Windings and Turnings of these *Lymphatics*, admit but of one particular Fluid, analogous to that which they already contain, and with which they were *ab Origine* or *in Ovo*, imbued; this they discharge into a fourth Order of Vessels named *Excretory*; when the same Fluid is unloaded into other Cavities, where these last often empty themselves, according to the Disposition of the Parts, to which they are convey'd. In

In short, Sir, notwithstanding the several Ways, by which these Gentlemen would *mechanically* account for the diverse Appearances in the animal Structure, you will find for the greater Part, they are either founded upon *Hypotheses*, deduced from the Principles of *Hydraulics* or *Hydrostatics*, with which they will not exactly quadrate; or from some others feigned, and easily confuted: As you may see if you look over the Author<sup>a</sup> aforementioned, of the one of whom he uses this Expression. *Theorema ad suam Hypothesin accommodavit, Fabulam elegantem & venustam, concinnavit, Fabulam tamen. Of an other, Ratiocinium decoratum, sed omnino inefficacem fabricavit. Of a third, Conjecturas ingeniosas, ad probandum vero nullatenus valentes, stabilivit.* And of almost all these very learned Writers, may be said what he applies to some, *tam hallucinari, quam vere nugari, quis non videat?*

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<sup>a</sup> Michellottus ut antea de Secretione Fluidorum.



So unstable truly do we find them in the very *Principles*, or which are lay'd down for such, and so uncertain the **Proofs** brought to support them, that they seem fitter to amuse than to demonstrate, at least, in such Manner as to take *curative Indications* thence: What else is their fundamental one of *Attraction*, but *Hypothetical*? of which the same Writer thus delivers himself, and with which I shall conclude these Quotations thence.

‘ Give me leave to observe that those  
‘ vast Powers of *Attraction*, that Dr. Keil  
‘ attributes to the *animal Spirits*, are mere-  
‘ ly *precarious*, and by no Means to be  
‘ admitted, till such Time as he can make  
‘ out, what the said *Attraction* is, and  
‘ that there is in Bodies really such a  
‘ Power existing: For ’tis plain at this  
‘ Time, that all these *occult Faculties and*  
‘ *Qualities*, especially those which are  
‘ pretended to act thus mutually upon  
‘ Bodies at a distance from each other,  
‘ or without Contact, of which kind are  
‘ the *Attractive* (and the like Fancies  
‘ of

‘ of People in a Dream, rather than learned  
 ‘ Philosophers) have been long since dis-  
 ‘ carded, and dismiss the Writings of the  
 ‘ more judicious Authors, which makes  
 ‘ us wonder that the learned Dr. *Keil*  
 ‘ should again revive them, and bring  
 ‘ them not only for *Principles* by which  
 ‘ to explicate the *Modus* of *animal Se-*  
 ‘ *cretion*, the Operation of Medicines,  
 ‘ but also for a Solution of *muscular*  
 ‘ *Motion*.

‘ Sir *Isaac N—n* does indeed make  
 ‘ use of the same Word, as a certain  
 ‘ Mode of Speech, not *physically* but  
 ‘ *mathematically*, never putting the same  
 ‘ yet as real, but in the way of *Hypo-*  
 ‘ *thesis* only: telling us at the same Time,  
 ‘ that by the word *Attraction*, he would  
 ‘ be understood to mean a certain Power  
 ‘ in, or endeavour of Bodies to joyn each  
 ‘ other at their Approaches: Whether  
 ‘ by Means of those Bodies themselves,  
 ‘ thus mutually acceding *ad se invicem*,  
 ‘ or from certain spirituous Particles e-  
 ‘ mitted through the *Æther*, the com-

‘ mon *Atmosphere*, or other Medium :  
‘ Or if *corporeal* or *incorporeal*, fluctuating  
‘ round about, and impelling thus the  
‘ one towards the other, he leaves un-  
‘ determin’d: Whilst Dr. *Keil* on the  
‘ other side, positively asserts this Power  
‘ of *Attraction* to be lodg’d, not only  
‘ in the *Corpuscles* of which the Blood is  
‘ made up, but the *animal Spirits* also ;  
‘ concerning which, since we have no  
‘ Demonstration of the Existence of such  
‘ a Power inherent in these *Corpuscles*  
(*I might add neither yet whether or no*  
*these animal Spirits are more than En-*  
*tia Phantasiæ sive Imaginationis*) ‘ we  
‘ may surely question the same, as well  
‘ as those of the *elective*, *attractive*,  
‘ *assimulative*, *concoctive*, *nutritive*,  
‘ and the like, so termed formerly a-  
‘ mong the Antients, but now exploded.  
‘ Nor do we find that Sir *Isaac* himself,  
‘ as he was ever cautious to feign a *Prin-*  
‘ *ciple*, by which to expound the hidden  
‘ Causes of Things : So in discoursing  
‘ upon those subtil Bodies, by Means of  
‘ whose



‘ whose Vibrations through the Nerves  
 ‘ to the Brain, and thence transmitted  
 ‘ back to the muscular Parts, both Sense  
 ‘ and Motion do arise, through the want  
 ‘ of Experiments to prove the reality of  
 ‘ such Spirits, he very prudently declines  
 ‘ meddling with any Exposition of their  
 ‘ Nature and Laws of Action; well know-  
 ‘ ing their Existence to be disputable,  
 ‘ and that those who had asserted their  
 ‘ Being, were of so differing Opinions,  
 ‘ that there was no coming at any Cer-  
 ‘ tainty about them.’

I have now done with this part of my Subject, intended chiefly to convince you, that as you ever expect to be a successfull Practitioner, not a *talking Physician*, you must have a constant and careful Eye to Practice. I mean, having sufficiently inform’d your self, of the Structure and Use of the Parts of human Bodies, both sound and diseased, you are then by diligent *Observation* to collect such a Number of *diagnostic* Signs, as may give you a just and true Insight into  
 the

the Nature of the Disease, such as may enable you to distinguish the same from others, how like soever in some common Appearances: Among them (where you can come at them) those especially which are *pathognomonic*, are of greatest Advantage: And when by a Series of these carefully collected from the Writings of the Antients, as well as practical modern Authors, such for Instance, of the latter Sort, as the judicious and learned *Riverius*, and the faithful *Sydenham*, more particularly verify'd by your own Observations, being beforehand as thoroughly acquainted with the *Materia Medica*, having hereby found out your Disease, you are then to direct the Remedy; such as you have also observ'd to have been recommended by the same honest Practitioners in the like Case, and as your own Experience thereof shall after farther encourage.

During this I think it expedient you make some short *Memoirs* of the Success from time to time, carefully noting every  
new

new or unusual Accident, which seem'd to frustrate your Endeavours, or perplex your Judgment in the Case, and minuting them down in like manner.

After a sufficient Collection of these, whether made to your Hand by others, or of your own, which carry with them the greatest Satisfaction, together with their Events, you are to found your *Prognostics*, that truly noble and advantageous part of the Profession, and by which an almost equal Honour, when rightly form'd and accordingly fulfill'd, accrues, as by the Cure, which of it self distinguisheth you sufficiently from a *Quack*, and will stand you in greater Use, than all the Languages of which you can make your self a Master.

As a help to this, your frequently dissecting Bodies defunct by Means of the same Disease, will sometimes afford much Insight, and confirm a well grounded *medical Presage*: Nor need you other *Principles* to go upon, or Basis on which to build, than the same close Attention  
upon



upon *Experiments* or Practice, furnish by a full Employment ; till then, you are to make use of that of others, and which, as *Helvetius* takes Notice, is the only way to improve in this Profession of Physick : 'Tis this indeed, as that great Man farther observes, that with a large Stock of *Prudence*, and a larger of *Probity*, will furnish such a Physician, as may be able to discharge, with a good Conscience, the Duties requir'd of him.

This Gentleman, 'tis true, as well as certain others, tell us now that a Method must be observed, even in our *Observations*, which are therefore to be reduced to some Rule ; having always an Eye to those immutable Laws, by which Nature has regulated the *Mechanism* of human Bodies. †

As if *Reason* were to be excluded from our *Observations*, without which they must be lame and imperfect : Or as if

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† Essay on the *Animal Oeconomy*.

one who could *reason* rightly about the same, and was truly expert in making them, could be at a loss to reduce the various *Specifications*, or different Appearances of the same Diseases, to their proper Class, any more than the *Botanist*, the several Simples of the same general Denomination, to their peculiar Tribes unto which they belong.

Mistake me not then, dear Sir, so far as to think I would have you lay your *Reason* aside, at a time when you will want it most, by taking care that your Remarks are just, upon Nature's several Motions, that your Inferences are rightly drawn, and that by Means of some Complication in the Distemper, you are not deceived.

Our Friend *Baglivi* will inform you<sup>f</sup> that the chief Pillars of Physick are *Reason* and *Observation*, and that the latter is the Thread to which the former is to

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<sup>f</sup> Practice of Physick.

point: For as *Nature* is the same, so every Disease afflicting her, has its certain and peculiar Mode, both at its first Onset, as well as at the time of its Increase and Declension. Now all these being brought about independently of the human Mind, so in tracing their *Nature*, we have not so much Occasion for a subtil or disguised way of Disputation concerning her Operations, so much as a repeated and sedulous Observation of what befalls the sick Person, which, as our *Sydenham* also has before taken Notice, requires neither *algebraical* nor *geometrical* Knowledge, but only such Acuteness of Understanding, as is conformable and obedient to Nature's Measures, and to her Instructions.

It was *Necessity*, saith the former, that gave Being to *Physick*, but *Experience* that brought it to Perfection: In its Infancy it was gross and stupid; yet in

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*Ibid.*

progress



progress of Time, by the daily Accession of new *Operations*, mutually illustrating each other, and especially by the Light of *Reason*, guiding and over-ruling all, it became a *liberal* and learned Art.

And thus you see how these are to go Hand in Hand, for whose better Illustration, take here the ensuing Case, in which my self was concern'd.

When a raw Practitioner, being sent for to a Person labouring under a very acute Pain on the Side, I caused him presently to be let Blood, which I knew by the Approbation of all, was the prime Remedy: Afterwards I directed as customary also, *oily Draughts*, *Sperma Ceti Boles*, with a *pectoral Decoction*; the Complaint continuing, I repeated Bleeding, but without Advantage. On the third Day, a Person of more Experience, and a sounder Judgment, was call'd, who presently taking the Case, which I had mistaken, order'd a *volatile Draught*, with one Grain of *Opium*, which with a few Spoonfuls of a *carminative* Mixture be-

tween whiles, immediately remov'd the Illness; whence I was, to my Discredit, convinc'd, there was occasion to *reason*, as well as to *observe*; for had I, as a prudent and experienc'd Man, observ'd, that instead of a hard and high Pulse, we had one that was low and deprest, in Place of an inflammatory Urine or a fizy Blood, the former crude and pale, the other florid; nor did my Patient cry out more at a time of Coughing or deep Breathing than at another; Symptoms all different from what happens in the genuine *Pleurisy*; I might have known this Case was only *spasmodic*, or purely flatulent, and that in vain were all my Endeavours, treating the same as an Inflammation, which in few Minutes I might have taken off, and saved my Patient's Blood, for which I had been answerable, had he miscarry'd thereby, or had not a more expert Practitioner stept in to ransom him.

I have instanced the rather in this Case, there being none more common than such

*Spasms*

*Spasms* or Cramp-like Complaints, upon the nervous and membranous Parts of the Body, also frequently on those of the Trunk or Chest, imitating both *Peripneumony* and *Pleurisy*: In which neither Bleeding nor Expectorants, however serviceable in the true Affects of that Kind, are other than delusory and trifling: And where nothing takes off the Complaint like an Opiate, proportionate to the Degree thereof, together with the *Sal C. C. Vol.* or its Spirit *per se destil.* which I have found much more serviceable on these Occasions than in the inflammatory Cases, tho' here also it is customary to give them. neither must the lowness of the Pulse at all Times, which is the Effect of the Pain arising from the *Spasm*, hinder the giving a suitable Anodyne unless forbid by some Disorder in the respiratory Organs; as in *Dyspnae's* from pituitous Infarctions of the *Bronchiae*, or other Obstructions, which will rise again immediately upon removal of the Pain.



To conclude: As the Design of the foregoing was to caution you from taking any curative Indications from *Hypotheses* or *Theories* of any Kind, which correspond not with *Observation*, or are contraindicated by the Touchstone of *Experience*: So on the other, to persuade the use of *Reason*, in forming your *Observations*, and reducing them to such Method, that upon Occasion, having recourse thereto, you may readily find out the *Disease*, with the *Method*, which from a preceding Success under the same Appearance, had proved serviceable: Nor by any Thing I have said, would I have it supposed, that you are so ty'd down to simple *Experiment*, but that wherever there is room for it, you may also argue thereupon, as well in regard to the Disease you encounter, as the *Modus* of Operation, whereby the Remedy subdues the same: Which yet in Fevers, particularly of the nervous Kind (the Subject chiefly of our present Discourse) is not, I think, to much Purpose

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pose : However should you at any Time hereafter see Cause to believe otherwise, I would enjoyn you, if I could, for your Patient's Advantage, first to cure him by *Observation*, as *Nature*, not busy *Art* chalks out the Way, and that too by the most simple Medicines *Experience* dictates, when if you please, from what *Hypothesis* you will, either *Physical* or *Mechanical*, you may explain the Process : I cannot persuade my self you will think this a *Postulate* unreasonable, for in those Cases, where we can only argue truly or rightly, unless *à posteriori*, or that all we offer *à parte antè*, will be deemed no other than a *gratis Dictum*, it is now soon enough to begin our Reasoning, *ex post factis*, which whether or no satisfactory to Conviction, is sure to be attended with this Advantage above the other, that it will not hurt your Patient; however it may affect your own Judgment and Reputation.

I am too well apprised of your Candour, to doubt your taking all in good

Part, being very sensible, that if any thing I here offer, may prove instructive to others, under the same Cover, it will be equally satisfactory to your self, as to

S I R,

*Your Friend, and very*

Ex Musæo Die 25  
Martij 1727.

*Humble Servant.*

**THE**



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T H E  
SECOND LETTER  
T O A  
YOUNG PHYSICIAN,

Directing his Regimen for the Cure,  
and his Conduct to the Sick.

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*Medio tutissimus ibis.*

Ovid.

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*Dear Doctor,*

**I**N my former, having advis'd you to trust to no *Hypotheses* or *Theories*, in your Attendance upon *Fevers*; or borrowing thence any *curative Indications*, which can be of no Advantage to your Patient, any farther than supported

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by *Observation*, or confirm'd by *Experience*: I shall in this take Occasion to deliver my Thoughts with the like Freedom, concerning the *Regimen*, I mean the *Medicinal*, most suitable to the various Kinds thereof ; such as I have observed most available, and by which you may run the least hazard of your Patient's Life, as well as your own Credit, when other Gentlemen, if of Probity equal to their Learning, shall happen to be call'd in upon you.

But before I enter upon this, I will here give you some general Definitions of the Disease, as well as touch upon the Subdivisions thereof.

First, I observe Disputes, as to the very *Essence* of a Fever, among the *Mechanicians* themselves! Thus

A Fever, according to Dr. *Pitcairn*,  
 \* is nothing more than an increased *Velocity* of the Blood's Motion, to which an-

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\* Elements of Physick.

other of the same Form<sup>b</sup> answers, that it is first of all a great Mistake in those who judge of the *Velocity* of the Blood, by the frequency or quickness of the Pulse; as if a quick Pulse always indicated an increased *Velocity*. And 2dly, a greater, to define a Fever by an encreased *Velocity* of the Blood: For nothing is more manifest to Experience than this, that the *Velocity* of the Blood may be encreased extremely without a *Fever*, as upon violent Motion, hard Drinking, or the like; and on the contrary, its *Velocity* is oftentimes diminish'd, as appears from the great weakness of the Pulse in the worst of Fevers. So that a Fever with this Gentleman, consists in a preternatural Heat and Rarefaction of the Blood, attended with Inflammation, Dilatation of the blood Vessels, and a consequent Compressure and *Obstipation* (*for you know these People delight in odd Words*) of the Lym-

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<sup>b</sup> *Morgan* in his Philosophical Principles.



*phaticks* and *glandular Strainers*: And according to the different Degree and Quantity of these Causes, there will particular *Fevers* arise, of a higher or lower Rank, and whose Symptoms will be more or less numerous, grievous and threatening, in proportion to the Degree of Force, and particular determination of these general Causes: And therefore is it plainly impossible in his Opinion, and the Attempt perfectly chimerical, to reduce Fevers to any certain and determinate Number, under proper and specific Names, so as to exclude any new Forms or Appearances; such as might give Occasion for some other Specification: For from the different Degrees of Quantity and Rarefaction, Inflammation and Obstruction, in Fevers, the different irregular Flux and determination of the Blood and other animal Fluids, in particular Cases, innumerable Symptoms may arise, some new ones every Day, which had not been observ'd before.

*Bellini's* Opinion of Fevers we have already lay'd down in our former.      A

A late Writer upon the same Subject, <sup>c</sup> who has taken many *Axioms* from him, acquaints us, *that an unusual or preternatural heat, along with a frequency or quickness of Pulse, denotes a Fever*; but this is liable to the same Objection as the former, since whatever quickens the Pulse, will bring on Heat, as we have instanced in Persons quickening their Pace to make themselves warm, and as in the Case of drinking overmuch strong Liquors: But the same Person doth acknowledge *that the frequency of the Pulse alone does not constitute the Essence of a Fever, till it degenerates into a Celerity*, nor surely then, if there be no other Attendant.

The excellent *Boerhaave* is more full in his Explication; <sup>d</sup> for tho' with the rest, he tells us, whatever a Physician can discover of a *Fever*, is to be found by the quick Pulse, which hath, for its

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<sup>c</sup> Criticon Februm by Dr. Strother.

<sup>d</sup> Aphorismi de Febribus.

Cause a quicker Contraction of the Heart, owing to the reciprocal Influx of the *Liquidum Nervosum*, with greater frequency than at other Times, dispensed to the Muscles and to the Cavities of the same Part, from whose irregular Influx, the Pulse will sometimes vary, as slower, faster, or intermitting: But then to difference this Velocity in Fevers, from that which may arise upon other Occasions, he says farther, that it must be attended at its first Onset with a *Chill*, a *Rigour* or a *Tremor*, after which ensues the Heat, greater or less, of longer or shorter Durance, according to the Nature of the *Fever*; for as these are more or less vehement, there will arise either the *acute* or the *slow* Fever, but in every one, proceeding from an inward Cause, there must be the *Horripulatio*, as well as the *Pulsus velox & Celer, inscretus*.

It were both needless and useless to enter farther upon the Definition of a Disease, with whose real Nature we are  
so



so little acquainted, and therefore very prudently hath *Heivetus* \* fallen upon the surest Method, where he informs his Reader that a *Fever*, as other acute Diseases, is better describ'd than defin'd. Thus when we see a Person seiz'd with a preternatural Heat, and Quickness of his Pulse, we are not to say that such a Person is in a *Fever*, unless these Symptoms are accompany'd with some Disorder in the natural Functions; for the heat and quick Pulse may happen without a *Fever*, as before observ'd.

In regard likewise to its *Essence*, so also to the Cause, there is Variety of Opinions: *Bellini* and *Borelli*, the two principal of the *Mechanicians*, as we have before intimated, allow of nothing else than *Motion*, *Quantity* or *Quality* in the Blood, increased or diminish'd, one or all of them, but which or how, seems difficultly explain'd, to conduce

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\* Essay on the Animal Oeconomy.

to the Production of the several Species thereof. This is said to be a very lucky Invention, as surely it must be granted, could the several Appearances therein be satisfactorily explain'd, without recurring to precarious *Hypotheses*; or that we could thence take better *Indications* for the Cure, than from some others, who have placed the same in a *fermenting Matter*, or a *disturbed Mixture of the Mass*, an *Acrimony of the Juices breaking the Globules*, and *shedding a poisonous Liquor thereinto*; contrary to which last I find the foresaid Author delivering his Opinion, <sup>f</sup> viz.

‘ That all *Fevers* are caused by some  
 ‘ gross indigestible Humour, contain’d in  
 ‘ the *Lympha* or Serum of the Blood,  
 ‘ whilst the *Globules* are unconcern’d,  
 ‘ stagnating as it were in the *Lympha-*  
 ‘ *tic Vessels*.

And according to the *Criticon*, ‘ the  
 ‘ Mass at these Times contains some

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<sup>f</sup> Idem ibidem.

‘ unusual Mixture of extraneous Qua-  
 ‘ lities and Matter, which makes the  
 ‘ Motion thereof irregular, and keeps it  
 ‘ out of order, till the same is separa-  
 ‘ ted therefrom: This is what gives  
 ‘ rise to all the Symptoms that in Fe-  
 ‘ vers so grievously afflict our *Oeconomy*:  
 ‘ And tho’ *Bellini* doth assert there  
 ‘ is nothing farther contain’d in the  
 ‘ Blood, save its different *Quantities* of  
 ‘ Matter, by which it fills the Vessels to  
 ‘ a certain Pitch, with its Degrees of  
 ‘ *Velocity*, which are but the Result of  
 ‘ the more or less active Qualities con-  
 ‘ tain’d therein; yet no Man can practical-  
 ‘ ly assure you, whether the bare encrease  
 ‘ of the *Velocity* of the Blood’s Motion,  
 ‘ may not rarify its Particles, and fill  
 ‘ each Section of the Vessels in an  
 ‘ equal Degree, as if the *Quantity* had  
 ‘ been really encreased, &

Be this, however, as it will, and our  
 Ignorance of the essential Causes of Fe-

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3 Criticon Februm, p. 78.



vers as great as it may be, that there is somewhat foreign to *Nature* got into the Blood at these Times, is beyond Controversy, and evident surely by her *Luctus* or Strife to get clear thereof; of which we have for Witnesses our Senses, When any poisonous Drug is taken into the Body, occasioning the like Disturbance, as is rais'd frequently therein, by some malignant Fever, such as Thirst, dry and black Tongue, enormous Vomiting or Loosness, shedding of the Hair, breaking out on the Skin, &c. with other deadly Symptoms, unless she happens to get the Victory, in a hard Struggle for Life: Why then should we doubt but that some noxious Particles shut in, that ought to have perspir'd; or others entering from without, either inspir'd with the *Atmosphere*, entering by the Pores, swallow'd with our Food, or finding any way Admittance, may not be able to raise an Effervescence or Perturbation of like Kind, to the endangering, if not subverting of the Animal Fabrick?

That

That this Liquor of the Blood is capable, and does naturally undergo a Sort of Fermentation, seems plainly deducible from the Heterogeneity of its Parts, I mean those composing the same, *viz.* our Aliments, which in their Communion, admixt with those in the Stomach, together with that of the *Saliva* convey'd along with them; and after entering the *Duodenum*, the *bilious* and *pancreatic*, being thus convey'd into the Mass, by the Thoracic Duct, they cannot, I say, miss fermenting and raising a Heat therein, which from a *natural* Degree may, by divers Causes, (as in the Case of *Fevers*) become *preternatural*.

For, as *Helvetius* has pertinently noted, <sup>h</sup> ' the Blood has a threefold Motion, the one of Fluidity, common ' to other Liquors, the second *protrusive* from the Impulse of the Heart and

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<sup>h</sup> In his Essay.

‘ Arteries, herein differing from those,  
‘ a third *fermentative*, or a Motion  
‘ throughout of all its Parts; this (says  
he) ‘ I call *Intestine*, agreeable to all  
‘ Fluids, under a State of *Fermentation*,  
‘ producing the various Humours of  
‘ which it consists, and giving warmth  
‘ to all the Parts. The Motion of the  
‘ Air is not the Principle of this Fluidi-  
‘ ty, which rather coagulates the same,  
‘ as soon as expos’d thereto: This Qua-  
‘ lity is therefore owing to the Motion  
‘ of the *Solids*, through which it passes,  
‘ together with the fermentative Moti-  
‘ on within it self. The protrusive Mo-  
‘ tion is then from the Heart and the  
‘ solid Parts, the fermentative from its  
‘ own dissimilar ones; for being a Com-  
‘ pound made up of various Particles, it  
‘ cannot fail of containing those which  
‘ are capable of *Fermentation*, when  
‘ such Particles occur, by Reason of the  
‘ Colluctation thence arising, together  
‘ with the violent Commotion thereof.



' In vain is this deny'd which is so  
 ' manifest, such as the Heat thereby a-  
 ' rising, and communicated throughout  
 ' the Body, the Formation of the *Bile*,  
 ' *Saliva*, and other Humors, with their  
 ' Power of Rarification, which can only  
 ' arise from this inward Motion of the  
 ' several Particles; call it *Effervescence*,  
 ' *Ebullition*, or what you please, we  
 ' shall call it *Fermentation*; and that a  
 ' *Fever* is to be no otherwise consider'd  
 ' than a Disease arising from some un-  
 ' usual *Ferment*, stirred up among the  
 ' Humors of the Blood, disturbing both  
 ' those natural Motions and Functions of  
 ' the Body, taking rise from several  
 ' Causes, as the cold Air, a Debauch in  
 ' eating and drinking; whereby some  
 ' Parts of the Aliment or Liquors taken  
 ' down, being hindred from perspiring,  
 ' or unduly retained in the Blood, will  
 ' give a quick and large Accession to  
 ' such as are disposed to ferment; and  
 ' whence will come on a brisker *Fer-*  
 ' *mentation*, that is a *Fever*.

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And

And this, Sir, I think, is farther manifest, by what we call the *Crisis* thereof, which is nothing more than the same Fermentation finish'd, when the Blood, now as it were despum'd (after the Manner of other Liquors under that State, some of which require a longer, others a shorter Space for the same) the Strife ceaseth, if Nature gets the better; and the Mass by Degrees recovering its former Condition, Health is again restored; otherwise being unable to accomplish the Work, she is forced to sink down under the Conflict.

Let this now suffice, as to the general Cause and *diagnostic* Signs of Fevers, the *Prognostics* whereof must be gather'd from the Nature and Tendency of the Fever it self; as whether to the *benign* or *malign* Species, or complicate with Symptoms more or less formidable; of which farther in our Observation of the several Sorts of them.

In the *Division* of this Disease, we find also as great Variety as in the *Definitions*;

*finition*; that of the Antients was the *Synochus simplex ac putrida*, the *Causus* or *Ardent*, the *Hætic*, *Intermittent* and *Malignant*. The two first went under the Name of *συνοχὴς*, the last was denominated *συνοχὸς*: The former differing little otherwise than in its less or greater Heat and Continuance. The mildest or lowest Degree of all is term'd *Ephemera*, as ending in a Day; yet sometimes running out to greater Length, *viz.* two or three. Opposite to the *Causus* or burning Fever, is the *Colliquative*, when instead of the violent Heat ensue as extreme Sweats, in which the Sick is, as it were, instantly melted down, the Humors going off, either by the Pores of the Skin, or by some other profuse Evacuations, *viz.* Stool or Urine, as in the Diabetes; also the *Epiala utriusque Generis*, in one of which the internal Parts seem cold, whilst the external are hot; in the other the internal Parts are hot, whilst the external ones are cold. To the former also belong the common



*Inflammatory*, which from the Part affected, takes its Name of *Anginalis*, *Peripneumonica*, *Pleuritis*, and the like: To the latter are adjoin'd, by some, the *Eruptive*, such as the *Variolous*, *Morbilious*, the *Erysipelatous*, *Miliaris*, *Rubeolæ*, *Rashy* and *Petechial*; tho' the former, I think, should more properly be number'd among those of the *inflammatory Class*.

Others have differenced them only as *Remitting*, *Intermitting* and *Continual*; whilst a modern Author<sup>i</sup> has farther confounded us with unheard of Terms of *Flatulent*, *Influent*, *Effluent*, *Inflatulent*, *Efflatulent*, *Influo-colligative*, and *Effluo-colligative*, with the like new Phrases, minted in a Country Town; and with some other *Mathematical Discoveries* brought lately to us in *London*. Proceeding now,

\* *Fewers*, saith *Helvetius*,<sup>k</sup> may be dis-

<sup>i</sup> *Morgan* in his *Philosophical Principles of Physick*.

<sup>k</sup> *Essay*, p. 17.

tinguish'd

' tinguish'd as *Intermitting* and *Canti-*  
 ' *nual*; all of them are occasion'd by  
 ' some Alteration in the Juices or Hu-  
 ' mors, with which the *Lympha* is clog'd;  
 ' and which are not thrown off all at  
 ' once; Part of them unite with the  
 ' *Lympha*, and are discharg'd into the  
 ' *Prime Vie*, the Stomach and Guts;  
 ' where assembling, they tumultuate and  
 ' corrupt the Aliment; after which be-  
 ' ing here disingaged again, they are  
 ' thrown into the Blood, and raise a  
 ' *Fever*; when continuing to be dissol-  
 ' ved and discharged without *Intermis-*  
 ' *sion*, the Fever is *continual*: But when  
 ' to unfold and expand themselves, they  
 ' require any stated Time, as several  
 ' Hours or Days, they cause *intermit-*  
 ' *ting Fevers*, whether *Quotidian*, *Ter-*  
 ' *tian*, or *Quartan*; the Difference de-  
 ' pending on the Quality of the Humor,  
 ' the Facility with which it disingageth  
 ' it self, and the Time it takes up to get  
 ' clear of the *Lympha*, and to pass thro'  
 ' the *Prime Vie*.

‘ Dr. *Pitcairn* hath differenc’d them  
‘ as *Legitimate* and *Illegitimate*.<sup>1</sup> A *Le-*  
‘ *gitimate* Fever makes its Onset with-  
‘ out any Sense of Cold or Shaking, that  
‘ is, when there is no other Disease  
‘ accompanying.

‘ The *Illegitimate*, is when the Fever  
‘ is attended with some other Disease,  
‘ or if to an augmented *Velocity* of the  
‘ Blood (by which you have heard he  
‘ defines the Distemper in general) some  
‘ other Fault therein, or in the *Solids*,  
‘ is also join’d, as a Lentor in the same,  
‘ or some internal Ulcer; for then the  
‘ Disease is not a simple Fever, but com-  
‘ plicated, or with an adjunct, which is  
‘ to be consider’d in the Cure: So that  
‘ if the Cause producing a Fever, part  
‘ of which also is an augmented *Veloci-*  
‘ *ty* of the Blood, produces a new Pe-  
‘ riod, in any given Time, before the fore-  
‘ going quite ceases, the Disease will be

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<sup>1</sup> See his Elements of Physick.



‘ a *continu'd periodic Fever*: But if it  
 ‘ does not produce a new Period, untill  
 ‘ a certain Time after the former has  
 ‘ finish'd its Course, it is then call'd an  
 ‘ *intermitting Fever*. In both, there-  
 ‘ fore, whether a *continued Periodic*,  
 ‘ or an *Intermittent*, according to the  
 ‘ Number of Hours between the Peri-  
 ‘ ods, it is *Quotidian*, a *Tertian*, or a  
 ‘ *Quartan*: So that the Sum of all in  
 ‘ this Gentleman's own Words is, that  
 ‘ a *Fever is an equable Augmentation of*  
 ‘ *the Blood's Circulation, either remit-*  
 ‘ *ting or intermitting*.

‘ Or a Fever (*according to the same*)  
 ‘ may be otherways distinguish'd, as al-  
 ‘ ready observ'd, into an *Ephamera* of  
 ‘ one or more Days, a *simple Synochus*,  
 ‘ or a Fever from Rarification, a *putrid*  
 ‘ *or continent one*, and a *Hectic*, which  
 ‘ goes on uniformly, excepting that the  
 ‘ Pulse and Heat are slightly rais'd after  
 ‘ eating.

‘ All these (*saieth he*) are *legitimate*  
 ‘ and simple *Fevers* so call'd, consisting

‘ of many Periods, and free from *Re-*  
‘ *missions* and *Intermissions*; nor do  
‘ they in any Manner differ, (*if you can*  
‘ *give Credit thereto*) ‘ than in the Degree  
‘ of the *Velocity* in the Circulation of  
‘ the Blood, and the consequent Rari-  
‘ faction and Heat, the Effect of both;  
‘ the various Degrees of which produce  
‘ Symptoms, which to the unskilful (*I*  
‘ *wish they prove not so at some times to*  
‘ *the more skilful*) ‘ may seem to be very  
‘ divers, or of another Kind.

‘ The following, which for your great-  
‘ er Satisfaction, I have here inserted, is  
‘ taken from Professor *Boerhaave*,<sup>m</sup> who  
‘ informs his Pupils, that a *Fever* is  
‘ always the Companion of some *In-*  
‘ *flammation*, either *continual*, *remitting*  
‘ or intermitting; the most simple of  
‘ the continual being on all Sides agreed  
‘ to be the *Ephemera* or *Diaria*, aris-  
‘ ing from violent Exercise, or some

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<sup>m</sup> Aphorismi de Feb.

' Trespass in the *Non-naturals* ; particu-  
 ' larly eating and drinking something  
 ' disagreeable, which is to be remov'd  
 ' by Rest, Abstinence and Dilution : If  
 ' it holds longer than a Day, it is named  
 ' a *continual imputrid Fever*, and then  
 ' may stand in need of Bleeding and Re-  
 ' frigerants. The *Continual Putrid* or  
 ' *Synochus Putris*, ariseth also from a  
 ' simple Inflammation or Obstruction of  
 ' the Bowels, through the Perspiration  
 ' disorder'd; this is discover'd by its  
 ' pungent Heat, irregular Pulse, thick  
 ' high colour'd Urine, sometimes turbid,  
 ' tho' at others crude, without a Sedi-  
 ' ment ; and must be differently attempt-  
 ' ed, according to Indications from the  
 ' Variety of attending Symptoms, the  
 ' Condition of Life, and the Time or  
 ' State of the Disease; and these are  
 ' call'd *Continentes* five *συνόχες*, having  
 ' no Remission of their Heat : *συνεχῆς*  
 ' *vero seu Continuas appellantur, quæ*  
 ' *continuae sunt remittentes.*

' The



‘ The *Ardent*, called also *Causus*, is a  
 ‘ distinct Species, so named from its in-  
 ‘ tense Heat, great Thirst, difficult Brea-  
 ‘ thing, with the dry Tongue, Anxiety,  
 ‘ Restlessness: Which may also befall  
 ‘ those who take long Journeys in hot  
 ‘ Weather, or feed much upon acrid and  
 ‘ spicy Foods, with strong inflaming Li-  
 ‘ quors; this being one of the most acute  
 ‘ Fevers we have, destroying the Patient  
 ‘ often before the fourth Day, seldom  
 ‘ holding out to the seventh.’

The last Division I shall take Notice  
 of, in relation to Fevers, is that from Dr.  
*Strother*<sup>n</sup>, who divides them all into *Ar-*  
*dent* and *Heſtical*: Under both Kinds  
 comprehending the *simple* and putrid *Syno-*  
*chus*, as also the *Συνοχὸς* or *malignant*. The  
 first he saith has a quick Pulse, Heat, and  
 high coloured Urine with a copious Se-  
 diment, and lasts seven Days without Re-  
 mission; the second has the same Appear-

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<sup>n</sup> In his *Criticon Feb.*

ances, but in a greater Degree, acquiring sundry Names from its various attending Symptoms, as *Elodes*, *Affodes*, *Epiala*, *Rheumatica*, *Pleuritica*, *Anginosa*, *Erysipelatosa*, &c. The latter is a continual Fever of the worst sort, usher'd in with the most threatening Appearances, as the dry and black Tongue, *Vigil Delirium*, *Subsultus*, pale, straw-coloured, unconcocted Urine; which is farther subdivided into the *Simple*, *Malignant*, *Pestilential* and *Pestis*, bringing them all however under the foresaid, two-fold Denomination; for if the Heat be either above or below the *natural Standard*, we either burn with a *Causus*, or are afflicted with a *Hectick*: These two, viz. *Ardent* and *Hectical*, according to our Author, contain the summary of Fevers, whilst their Extremes are the occasion of all the supervening Symptoms, if we add some Qualities conjoyn'd, from whence they may be said to have their *Esse*. For if the *fiery* Particles are plentiful in regard of the *humid* ones, the *Ardent* is pro-

produced; but if the *humid* or *serous* superabound the *Hectical*: And this he will have to be also the most useful Division of them, under which are contain'd both *Intermitting*, *Remitting* and *Continual*, as well as the *Malignant*: The *Eruptive* are reckon'd of a *neutral* Sort; but in the farther prosecution of the same Subject, he tells us, that if we rightly consider, we shall find that Fevers differ only in *Degrees*; that an *Ephmera* is the lightest of all, where the Urine settles at the very beginning; that this *Ephmera* may turn to a *Synochus Simplex*, and that to a *Putrid*, which has its *Remissions* and *Exacerbations*, but no certain *Intermissions*: And this *Putrid* may degenerate into a *Malignant*; that each may turn to an *Intermittent*, which begins with Coldness, as does the *Remitting*; whilst the *Malign* comes on with *Rigor* if of the *hectic* Species, but a *Horror* when of the *Ardent*: So that all are attended either with *Algors*, *Rigors* or *Horrors*, returning with each *Paroxysm*  
of



of the *Intermittent*, but not so in the *Remittent*, where the same appears only at the first, unless shifting as they do frequently, the *Continual* remitting, the *Remitting* growing into *Continual*, and both running into *Intermittents*: A plain Indication, saith he, of their differing only in the *more* or *less*.

This last Division of *Fevers*, however concise, yet borrowing a Term that may occasion Confusion, I mean that of *hectical*, which is appropriate to a particular Species, with which those our Author here intends, have no Agreement, unless in their milder Heat, than have the *Ardent* Kind, I would rather distinguish them as *Sanguinary* and *Nervous*: Not that we are to suppose the Blood in the latter to be unconcern'd, but that together therewith, some deleterious or morbid Impression is also fix'd upon the *fluid* of the *Nerves*, either someway impeding its Secretion at the fountain Head, the Brain, or a dispencc thereof by the proper Tubes of Conveyance, to the Heart, Lungs and  
i
other

other Parts of the *Machine*; hence the difficulty of Respiration, as well as Circulation to the Blood; the *Suspiria*, with Oppression on the *Præcordia*; the low, creeping and intermitting Pulse; the prostration of Spirits, and Languor that comes on, and suddenly destroys the Sick labouring under the same.

These indeed are the *Febres Mali Moris, ac pessimæ Indolis*, which the common People (having doubtless been so taught by some of the Faculty) call Fevers of, or on the Spirits; which if so or not, yet may serve perhaps better to direct the *Regimen*, than that of the *Hætical*.

Under the first, *viz.* the *Sanguineous*, I would have comprehended all of the *inflammatory* Kind, such as are attended with great Effervescence or Ebullition in the Blood, with strong and high Pulse, deep Urine, great Thirst, Inquietude, Vigil, Phrensy, &c. The particular Fevers under which Appellation, are those which accompany the *Angina, Peripneumony, Pleurisy*, and all such as are attended with,

or

or have adjoyned to them, either a general or particular *Plethora* of the Vessels, or excessive Rarification in the Blood.

Among the *Eruptives*, under the same, I should reckon the *Small Pox*, *Measles* and *Scarlet Fever*; whilst some others of the *Rashy*, *Miliary*, but especially the *Petechial*, as having the Symptoms just before enumerated, some or other of them attending, should be placed under the *Nervous*. And the *Intermittent* may stand *Neuter*, if truly such, at least distinguishable only as *primary* and *secondary*: By the first understanding the common *Ague*; by the last, the *Synochus* or any other *continent Fever*, after some Days, taking the type of an *Intermittent*, either *quotidian* or *tertian*; which being duly form'd, admits of the same Cure with the *Ague* it self.

I have now done with the several *Definitions* and *Divisions* of Fevers which I found nigh at Hand, and will hasten to the Cure, presenting you first with an Essay towards the same, in the *mechanical*



cal Way, from a Gentleman I have already often quored, the learned *Pitcairn*. °

‘ First, it is manifest, that the Cure of  
‘ every *legitimate* Fever, accompany’d  
‘ by no others, is most expeditiously  
‘ done by Bleeding, and by Remedies  
‘ that abate the Blood’s Rarification ; such  
‘ as Sugar of Lead, purify’d Niter, Spirit of Sulphur, Juice of Lemons, distill’d Vinegar, Emulsions of the cold  
‘ Seeds, and more especially Blisters,  
‘ which draw off part of the Serum too  
‘ much rarify’d ; and these are the Remedies to be used in every *legitimate*  
‘ Fever, till we have the good luck to  
‘ find out one, that will immediately abate the Blood’s Rarification, and diminish its circular Motion, without bringing on worse Symptoms.

‘ Secondly, you are carefully to observe, that you do not easily administer  
‘ *Sudorifics* in these Fevers, because they

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• Elements of Physick.

• will

‘ will keep up the augmented *Velocity*  
 ‘ and *Rarification* much longer, and we  
 ‘ ought never to prescribe such, but when  
 ‘ there are Signs of *Concoction* (which  
 ‘ before were not) in the Urine : And  
 ‘ such Signs will denote it not to be a  
 ‘ *legitimate* Fever in every respect, but  
 ‘ a Companion to some other Disease,  
 ‘ which arises from a Viscidity of Hu-  
 ‘ mours capable of *Concoction*.

‘ And Thirdly, when this *Viscosity* be-  
 ‘ gins to be so broken, as to be capable  
 ‘ of Separation in the Kidneys with the  
 ‘ Serum, it is a sign of a *Concoction* : And  
 ‘ when the same Matter, which can pass  
 ‘ the *Renal Streiners*, by a farther Di-  
 ‘ minution, is render’d fit to be carry’d  
 ‘ through the *cutaneous Glands* in *Sweat*,  
 ‘ then, and not before, *Sudorifics* may  
 ‘ be administer’d with Safety ; which Time  
 ‘ may be discover’d by the Signs of *Con-*  
 ‘ *coction* in the Urine, which is a Sedi-  
 ‘ ment equal and copious, with regard  
 ‘ to the Disease : and thus much of the  
 ‘ *legitimate* or simple Fevers and their  
 ‘ Cures.

N

‘ But

‘ But Fourthly, the Cure of a *continued*  
‘ *periodic Fever*, cannot be well under-  
‘ stood, without being first taught the  
‘ Cure of *Intermittents*, as such; because  
‘ the Cure of *Periodics* is compounded  
‘ of the Cure of a *simple* Fever, and an *in-*  
‘ *termittent*, as such, respectively.

‘ Therefore unless old Age, or a worn  
‘ out Constitution forbids, at the longest  
‘ Distance from a subsequent Fit, in an  
‘ *Intermittent*, a Vein ought to be open’d;  
‘ both on the Account of the *Fever*,  
‘ which threatens when the Fit is at the  
‘ highest, and upon Account of the *Vis-*  
‘ *cidity* from whence it has its Origin;  
‘ for Bleeding diminishes the *Viscid-ity*  
‘ of the remaining Mass.

‘ And lastly, since this *Viscid-ity*, for  
‘ the most part, has its rise from what  
‘ is taken in by way of Diet, and the  
‘ *Lentor* is deriv’d from the first Passages:  
‘ And because *Vomits* more effectually  
‘ remove such *Lentor* than *Purges*, and  
‘ by the necessarily greater and more fre-  
‘ quent Contraction of the Stomach and  
‘ Ab-



‘ Abdomen, press out that *Lentor*, which  
 ‘ adheres to the small Vessels, in a short  
 ‘ time, which *Purges* would hardly reach  
 ‘ in an Age, and because Delays are  
 ‘ dangerous in a Fever; therefore a *Vomit*  
 ‘ ought always to be timely enough given,  
 ‘ for its Operation to be over before the  
 ‘ return of the Fit; which may be re-  
 ‘ peated once, and sometimes twice, at  
 ‘ due Distance, if the Patient is able to  
 ‘ bear it, and is not subject to vomit up,  
 ‘ or spit Blood.

‘ When the vomiting is over, some  
 ‘ *febrifuge* Medicines are to be given, (tho’  
 ‘ improperly so call’d) and which ought  
 ‘ rather to be term’d *attenuating* or *ape-  
 ‘ rient*, of which generally the *Bitters*  
 ‘ are esteem’d the best; among these how-  
 ‘ ever the *Cortex Peruvianus* is yet much  
 ‘ the more preferable.’

After this *Specimen* in the *mathemati-  
 cal* Way, I shall proceed to my own;  
 and that I may observe some Method  
 therein, pursuing the Division of Fevers  
 into *sanguineous* and *nervous*, shall begin

with the former or *Inflammatory*, in which through an extraordinary Heat and Rarification thereof, the Blood is thrown with Violence on some particular Parts, either external or internal ; giving Rise, as we have formerly observed, to a peculiar Epithet, thence borrowed, *viz. Anginalis, Pleuritica, &c.* as a Note of Propriety, or belonging to the same ; and here before I proceed farther, give me leave to entertain you for a minute or two, with the Opinion of a late Author <sup>P</sup> concerning the Nature of an *Inflammation* in general : With which for its Novelty and Force of Persuasion, being my self well pleased, it may not perhaps be unacceptable to you, my Friend, if yet unacquainted therewith, *i. e.* his new Distinction of the *lymphatic Vessels*, into *Arteries* and *Veins* ; the former delivering (like the Arteries the Blood) their Liquor to all the Parts: the

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<sup>P</sup> *Helvetius* in his Essay on the *Animal Oeconomy*.

latter

latter (in like manner as the Veins) carrying it back to the Cistern or Fountain; the rise of which Vessels, we have already given you from the same Author, when speaking in our former, of the Nature of *Secretion*, with the *Modus* of discerning the several Fluids from the Blood.

‘ Anatomy (as he tells us) confirms  
 ‘ this Notion, which tho’ it shews only  
 ‘ the most considerable of these Vessels,  
 ‘ and is not able to distinguish the greater  
 ‘ part, too minute and intricate to be  
 ‘ plainly discern’d, as in their natural  
 ‘ State, carrying only a thin translu-  
 ‘ cid Liquor, nevertheless do but observe  
 ‘ the numberless small Vessels, Injections  
 ‘ offer to our View: Consider they neither  
 ‘ appear Red, nor are full of Blood du-  
 ‘ ring the Life of the Animal, unless by  
 ‘ Accident, or under an inflamed State;  
 ‘ and then we shall easily perceive, that  
 ‘ they can be nothing in reality but *lym-*  
 ‘ *phatic* Vessels, tho’ by most Anatomists,  
 ‘ appropriated to the Blood.



‘ It will not therefore be improper to  
‘ observe by the Way, that these fine  
‘ Injections do often serve rather to lead  
‘ us into Error; and are more for Osten-  
‘ tation than Instruction and Use. They  
‘ may indeed guide us to more important  
‘ Discoveries, but they are also capable  
‘ of hiding a great many Truths from  
‘ us, and of stifling several Discoveries:  
‘ The Confusion into which they throw  
‘ the *sanguinary* and *lymphatic* Vessels,  
‘ frequently hinder us from distinguish-  
‘ ing them with the necessary Exactness.

‘ In their natural State, these *lymphatic*  
‘ Vessels cannot admit the Blood, be-  
‘ cause where they commence, they are  
‘ too slender; or rather because the *lym-*  
‘ *pha* which they contain, is a Fluid wholly  
‘ differing in its constituent Parts, from  
‘ the *Globules* of the Blood; and indeed,  
‘ tho’ it circulates in the blood Vessels,  
‘ along with those *Globules*, yet does it  
‘ never perfectly mix with them, as is  
‘ seen by the help of Glasses, in the *Me-*  
‘ *sentry* of the Frog, or in the *Fins* and  
‘ *Tails*

‘ *Tails* of certain Fish; but when the  
 ‘ *lymphatic* Arteries happen to be dilated,  
 ‘ or the Blood put into any violent Mo-  
 ‘ tion, it does sometimes open it self a  
 ‘ Passage into them, as in the Case of  
 ‘ every Inflammation falls out; for then  
 ‘ the Force is greater than the Resistance  
 ‘ either of the *lymphatic* Vessel it self, or  
 ‘ the Fluid it contains, as in the Case of  
 ‘ *Fevers*, where sometimes the Rarific-  
 ‘ tion of the Blood is so great, as very  
 ‘ much to dilate its own Vessels; The  
 ‘ *Lympha* in like manner will be rarify’d,  
 ‘ and its Vessels dilate either through the  
 ‘ Rarification of their own Liquor, or  
 ‘ by means of the Dilatation of the Blood  
 ‘ Vessels, which being distended will ne-  
 ‘ cessarily enlarge the Orifices of the o-  
 ‘ ther, which are connected to them.

‘ When the Blood then at such Times  
 ‘ (i. e. *the Patient in a Fever*) is forced  
 ‘ into the *lymphatic* Arteries, from what-  
 ‘ ever Cause; no wonder it should stag-  
 ‘ nate, and stretch these tender Vessels,  
 ‘ whence Redness, Pain and Tension,

‘ with great Heat about them; the first  
‘ is occasion’d by the Blood got into these  
‘ Parts, which before looked white, as  
‘ carrying in them a thin transparent Li-  
‘ quor: It must require a greater degree  
‘ of Heat, since the Blood in this Case  
‘ fills a greater number of Vessels, and  
‘ in greater Quantity than it did before:  
‘ The Pain arises not only from a stretch  
‘ of the Vessels themselves, but of the  
‘ nervous Membranes betwixt which they  
‘ are placed.” Finally to confirm this his  
Opinion, or by way of farther illustra-  
ting the same, he brings an Instance  
of the common *Ophthalmy*, or *Blood-  
shed Eye*.

‘ The Redness or Inflammation of the  
‘ Eye, is here caused by the Blood ha-  
‘ ving passed out of its own, into the  
‘ *lymphatic* Vessels, belonging to the Part;  
‘ whence we infer, the same of all the  
‘ other *lymphatic* Arteries from the ca-  
‘ pillary Blood Vessels, which are distri-  
‘ buted in great Plenty through all parts  
‘ of the Body; the Case being the same  
‘ in



‘ in every *Inflammation* of all the other  
 ‘ Parts, which is occasion’d by the Blood’s  
 ‘ flowing into the *lymphatic* Arteries of  
 ‘ such Parts, as observed now, of the Eye,  
 ‘ and as we see happen, even without re-  
 ‘ flection, in the *lymphatic* Vessels of the  
 ‘ Skin, when by any means, some un-  
 ‘ wonted *Effervescence* appears thereon,  
 ‘ as in sudden Flushings or the like.’

The Reason why these Vessels are de-  
 stitute of Motion, he tells us, is because  
 they are out of the Force of the Heart,  
 in like manner as are the Veins.

To detain you now no longer, I shall  
 hasten to the *Regimen* of these Fevers  
 in general : And as *plenitude* of the Ves-  
 sels from some *Crapula*, or obstructed  
 Perspiration, for the most part, gives be-  
 ing to the same, at least the Blood’s be-  
 ing too much rarify’d therein; so a *De-*  
*pletion* of them by Bleeding, as the Strength  
 will allow, together with other suitable  
 Remedies, which the Case shall require,  
 are here indicated: After which the set-  
 ting open the Pores by some very gen-  
 tle

tle and mild Remedies, may be farther useful.

The Signs of this *Inflammation* or *Plethora* in the Vessels, you are to take from the Patient's Habit, frequently *Sanguine*, with a florid Complexion: His way of living, with the antecedent Cause of the ferment stirred up in his Blood, the inflamed Urine and high Pulse, the tensive Pain in the Head and other Parts of the Body: But here you are to note, that oftentimes through a mere Fulness of the Vessels, in this kind of Fever, the Pulse will be oppress'd, and the Stroke seem feeble, or from the excessive Rarification of the Blood, as it were stifled, which after Ventilation by the Lancet, recovers it self and beats strong and high.

In drawing off a sufficient quantity of Blood, altho' the same appears florid at the first, yet if Pains upon the Membranes accompany, as in *pleuritic*, and *rheumatic* Affections, you will find it after *sizy*, or like melted Fat, streaked oftentimes with a yellow or blewish Cast  
at

at the top ; and this hint about the Pulse, I thought convenient to give you, that you may not be discourag'd, by the lowness thereof at such Times ; and in those *plethorick* Habits, to bleed your Patient, especially at the first Attack of the *Fever*, before his Strength has been thereby impair'd, which in the *State*, much less at the *Declension*, cannot be so safely enterprised.

After Bleeding, more particularly, if a Debauch either in Eating or Drinking gave occasion to the Disease ; or otherwise, if any loathing or retching so require, a Vomit ought to be administer'd of the *Rad. Ipecacuan* given in Sack Whey, Carduus or green Tea, or Chicken Water, as your Patient shall like best ; which being over, he is to be put into his Bed, with the same covering he has been us'd to ; and now for his Thirst, let him be indulged in some thin diluting Liquor, such as the said Whey, an Emulsion of the Seeds and Almonds in Barley Water, or the antient *Prisan* : Nor would I be  
so



so rigorous as at all Times to forbid a Draught of Table-Beer with a Toast, between whiles, provided no rheumatick Pains, *Cholic* or *Diarrhæa*, attend; for this being our common *Diluter* in the Time of Health, or what we have been ever accusom'd to, is not always to be denied in Sickness, when earnestly desired, under the Restrictions above mention'd.

I must insist upon this Method of giving a Vomit, such as here directed, after bleeding your Patient ; because I know of nothing so likely to draw off the Fuel, and thereby lessen the Fever, let the Nature thereof be almost what it will. You may trespass indeed, in bleeding, but, I think, you cannot in this particular Evacuation, if the Sick is not subject to a Spitting of Blood, in any Stage thereof, where a *Nausea* shall indicate, and the Dose of the said Remedy is suited to his Weakness, of which thus given, where such call for it appear'd, even under the greatest, I cannot say that I have once repented. The

The Vomiting being over, if the Fever still runs high, or seems to threaten the Head by a too rapid Course thereof, you may take away more Blood; after which, the Sick being uneasy, if something farther is not done to remove his Complaint, and (as he thinks) to shorten his Disease, you are to give some *Alexipharmic Bole* or *Powder*, wash'd down with a *cordial* Julep between whiles.

And here, that you may rightly understand me, I must explain my self what I mean by this *Alexipharmic*, and what by my *Cordial*. First then, negatively, I mean none of those jumbled Compositions of the Shops, the *Theriaca* & *Mithridatium*, which are here so far from deserving that Title, that they may rather be termed *Pharmaca*, as implying in the worst Sense of the Word *Poisons*, and which I am afraid, thro' their indiscriminate Use, have carried off more People than all the Plagues we ever had in *England*: Nor by the Word *Cordial*,

would I be understood the *Treacle-Water*, or any other distill'd Compound, much less the *Tincture* and *Syrup* of *Saffron*; for tho' both these are allowable in some of the *nervous Fevers*, so called, especially towards the Declension, when Nature flags, and the Spirits unable to expand themselves, the Pulse grows feeble, together with the native Heat: Yet at these Times, or in our present Case, a Morfel of the *Conserva Lujule*, with some simple *Absorbent*, is the best *Alexipharmic*, as a few Grains of *Niter*, with a Draught of an *Emulsion ex Sem. Fr. cum Amygd. in aq. Hordei*, the only *Cordial*.

These may be given at a due Distance, till the Ebullition of the Blood is over, or that the Pulse is reduc'd to its wonted Tenure, before which a moderate breathing Sweat appears, the Urine also together therewith, foreboding a *Crisis* now at hand, which from its intense Colour turns paler, drops a Sediment, and the Sick recovers; when it may be  
necessary



necessary to give some lenient Purgative, that without raising a Commotion in the Blood, may discharge the morbid Feculencies therein remaining; nor must you forget to empty the Bowels daily, or each other Day of the intestinal Fæces, by some cooling laxative Clyster, if they do not answer of themselves.

This Regimen will also serve in common for all Fevers, attended with *Inflammation*, or which may be termed *sanguineous*, as those of the *Angina*, *Peripneumony*, *Pleurisy*, *Rheumatism*, saving that these usually require more frequent bleeding, and in larger Quantities, wherein truly the whole curative Scope in a Manner consists, especially that of the *Pleurisy* and *Quinsy*; but in the *Peripneumony* the Oyls and expectorating Remedies are also to be prescribed, as peculiar to the same.

I have purposely forborn the Mention of *Blisters*, not only for that I cannot come into them my self, so readily, as is now the Mode among us, in every of

these Fevers, unless some of those now mentioned; except some obstinate Head-ach or Stupidity encourage their Application; but for that, I intend presently to give you my own, with the Sentiments of others, about them. Nor can I see Reason to alter this *Regimen* in some *eruptive Fevers*, of the *inflammatory* Kind, I mean particularly the *Small-Pox*, in full or sanguine Habits of the *coherent* or *confluent* Sort, setting aside the repeated Bleedings, which too may be requir'd from an over-bearing Heat, as well about the Time of Eruption, as at that of the *second Fever*, attended with streight breathing, as also the clystering and purging, before the State of Maturation.

And this is all I have to offer for your general Observation concerning the Fevers of this Class: For as I intended not to give any particular *Formulae*, or to stuff my Letter with *Præscripts*, so neither is there Occasion for what every Physick-Writer rather too much abounds with, and with which you are already well furnish'd

nish'd : To be plain indeed herein, tho' I scarce know any Physician who is ignorant of one Remedy or other, to answer the several *physical Intentions*, yet perhaps it may not be easy to find those who are rightly appris'd at all Times, when this or that *Intention* are the true *Indicata*, or require to be answer'd.

The best Author upon this Subject, if we except the learned Dr. *Freind*, and our Friend *Sydenham*, is a very antient one, but lately reviv'd among us, by Recommendation of the former, I mean *Lommius*, whose Treatise is worth your perusal.

This honest Writer set forth his Book of *continual Fevers* in the Latin Tongue (in which the same is now reprinted) above 150 Years past, wherein you will find, without one *¶*, he places the Cure in *Bleeding*, *Dilution* and *lenient Purgation*; neither the first nor last, however, to be enterpriz'd, but with Regard to the Strength of the Patient evinced by that of the Pulse, and the Time which is



the Beginning of the Invasion, for bleeding; as that of the Declension of the Disease, for *purging*; the untimely Use of both, as he judiciously remarks, having been the Death of some, as the heaping up of Medicines, has been of more; especially those by which Nature has been some how interrupted, or put aside the Work she had began, and, perhaps, otherwise compleated.

About the *State* or Time of *Concoction*, he takes Notice of the *Fons frigida*, a large Draught of which he now thinks proper to give the sick Person, by the Example of *Galen*: whence, he says, the Heat being driven outwards, either a *critical Sweat* follows, *Vomiting* or a *bilious Flux*; so uncertain, it seems, stands the Issue of the Experiment, which is to finish the Disease and restore Health: But then observe, he exceedingly blames those who, upon any Pretence whatever, shall dare to administer this Remedy at any Time of the Fever, which was the Custom of *Avicenna*,

cen, and has been lately inculcated among our People, by a crack-brain'd Divine, in his *Febrifugum Magnum*; in respect to which you may consult some Remarks lately publish'd, as an Appendix to the *Modern Quack*, by Way of Answer to this extravagant Advance; I must own, indeed, I think it so hazardous an Experiment, that I cannot advise you should try it at any Time; for if the Evacuations should not follow or prove critical, as unseasonably administred, before Nature was prepared, when the Strength is much enfeebled, and she unable to rouse up, and discharge her now double Burthen of the *Disease*, and the intended *Remedy*, by one or other of the Ways here specify'd, what must ensue but Suffocation of the vital Heat, and the absolute Destruction of the Patient?

But I shall now give you my Thoughts about the *Regimen* of the Fevers I call *Nervous*, and which (as the Pulse must direct you) is, generally speaking,

to be different from the foregoing; for here no Evacuations, unless those of *Vomiting*, *Sweating* and *Blistering*, are to be admitted. When contrary also to the former, being still guided thereby, as the Pulse is weak, and the Patient complaining of great Langour or Lowness of Spirits, so the warmer Remedies will be required to raise the same, invigorate the Blood, and quicken its Motion; of which Kind are the *Lapis Contrayerva*, the *Pulv. ad Guttet.* the *Pulv. e chel. Canc. C.* with a few Grains of *Crocus* or *Castor*; or where this last is nauseated by the weak Stomach, the *Spec. Diamb.*: And when by these Means, together with the diluting Liquors, a Sweat breaks out, I always allow my Patient a Glass of some soft agreeable Wine, such as that of *Sherry*, once, if not oftener, in twenty four Hours, instead of a *Cordial*: Nor can I see Reason to forbid the same, at these Times, any more than the *Pearl Julep* so customarily taken.

And



Let. 2. Concerning FEVERS. 213

And having here made mention of the *Bezoardic* Composition, or the *Pulvis Gasconicus*, I can do no less than advocate in its Favour, so far as to believe it the best Remedy (considering how the Practice of Physick is manag'd with us) that ever could have been invented.

The worst I have heard objected against it, is, that of its being a chargeable, insignificant, or mere *absorbent* and that but an indifferent one, in Comparison of some viler we trample daily under our Feet; and farther that we trifle while we use it.

I wish I could say no worse of our *Treacles* and *Mithridate*, with some others daily in Use: For since the most knowing among us can understand very little of the real Essence of these *Fevers*, or fathom the several Processes of Nature, in attempting her Rescue from the same, which of us can be at all Times positive, he has not some Way hindred, as well as promoted her imperceptible and inscrutable Way of working this Deliverance? Happy,

Happy, my dear Friend, shall we be at the long run, if we can accuse ourselves of nothing more than a harmless trifling: Happy, I say, if at some critical Times, we have that inward Peace and Satisfaction, that we do no Mischief. How this can be the Lot of such as are forcing Fire-Balls down Mens Throats, of *Theriac. Mithridate, Camphir. Snake-Root*, with those Creatures of the Fire, the *volatile* and *fix'd Salts*, and these every three or four Hours, wash'd down with as hot a Mixture of some Spirits, which they call a *Cordial*, at a Time when the Sick are scorch'd, as I may say, to Death, Witness the dry and parch'd Skin, the black and brushy Tongue, the crusty Fur upon the Teeth, and other Signals of an *Incendium* within: How these, I say, can have that inward Assurance that they never do worse than trifle; or that instead thereof, they have not actually destroy'd those Lives with which they were entrusted, I cannot see, nor I think any considerate Person whatever. If

If then, upon this Occasion, it must be said we trifle, because, perhaps, we give no Medicines at some Times, or none but what are safe and innocent; thus trifled our great Master *Hippocrates*, who, tho' constant in observing, gave but few, or for some Days none at all, till he could see what Nature call'd for, and the Method which she aim'd at for helping of her self: And thus trifled our late famous *Sydenham*, who tells us, that finding his Patient one Day no worse than the Day before, and the Day following in the same Condition, thought it his Duty still to wait her Motion, fearing, by intermedling, he should do some Hurt, till Dame Nature shew'd him what Way he was to take, by some more manifest Indication than he was yet Master of, or what kind of Remedy she stood in need of.

Returning now to the *Bezoar*, which a learned Gentleman<sup>a</sup> so much decries,

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<sup>a</sup> Dr. *Stare* in his Observation and Experiment upon *Bezoar*.



and endeavours to depreciate; I must advise you, notwithstanding, to entertain a good Opinion thereof, especially the *compound Powder of Crab's Claws*, in which the same is an Ingredient; and where your Patient can pay for it, I would never have it omitted in your Prescription, at least, you should make it a Part thereof; by which I dare ensure you this one Advantage, that no Physician, besides himself, who shall chance to be call'd in upon you, will say you have done amiss; or if he be a Person of any Candor, find fault for your so doing, which I cannot promise shall not happen at our present low Ebb of Honour, under any other.

The late learned Dr. *Edward Tyson* had a great Opinion of the *Bezoar*, who was no superstitious Physician, nor regarded traditionary Accounts of the Virtues of any Drug or Medicine, that was not confirm'd to him by Experiment or Observation: I have heard him say, when I had little Experience of it my self, that

he was satisfy'd of its cordial Virtue, from many Instances; and that it had this Property beyond most others so denominated, of being friendly to Nature, agreeable to the weakest Stomach, which cannot, indeed, be said of some other Medicines; that it heated not the Blood, tho' a kindly *Sudorific*, by exagitating its Mass, and causing a Perturbation among the Humors therein, of all which I am long since fully satisfy'd, by Experiment upon my self.

And it will be surely time enough to discard this innocent Remedy, when we have a Substitute that will do more Service and less Hurt: The Chalk, nor yet the caustic Salt, which the same Person, who finds fault with Bezoar, recommends, are doubtless none of these; the first, however a great *Alkaly* or *Absorbent*, being so far from a *Diaphoretic* as he would insinuate, that we have few better *Anti-sudorificks*, or which will do more in repressing the melting Sweats of *Hecticks*, binding up the loose Texture

ture of the Blood, and preventing its farther Dissolution; and the last, tho' suited to take off the symptomatic Vomiting in Fevers, and to stop the Progress of some *Intermittents*; yet where there is a Tendency to Stools, not safe to be given, since by pricking the Fibres of the Stomach, it will encrease the Looseness, and that way endanger the feeble Patient.

But I shall enlarge no farther in the Commendation of this most safe, and often serviceable Remedy; since all the Rhetoric its Opponent has used, with the sugar'd Words to sweeten up the Ladies,<sup>\*</sup> they still hold it, with the much greater part of the Faculty, in as good Esteem as ever.

There is another Composition coming now into Request, upon the same Occasion, wherein *Bezoar* has a share also, with some of the other *Absorbents*, and which I advise you should at some

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<sup>\*</sup> See *ibid.* His Vindication of Sugars dedicated to the Ladies.



times make a part of your Prescription, that is the *Confectio Raleighana*, of great Repute long since in private Practice, and now recommended to the College, from the good Opinion a leading Gentleman therein, has conceiv'd thereof; and which others I think should the rather entertain, if it were upon no other Account, than that of its being more temperate and agreeable to the Sick in general, than many others going under the name of *Alexipharmicks*, which are commonly prescribed.

These Fevers having run on some Days, do frequently intermit: The  $\Sigma\upsilon\nu\omicron\chi\eta\varsigma$  turning, as we have noticed before, to a  $\Sigma\upsilon\nu\omicron\chi\eta\varsigma$ : As *Prodromi*, whereunto the Urine now shews some tendency to Concoction, and from a crude, becomes first turbid, afterwards letting fall a lateritious Sediment, a Sweat breaks forth, and the Symptoms grow milder.

In this Case, it will behove you to wait the Circuit of a second *Paroxysm*, which being form'd in such manner, that

that you can be assur'd of the Intermif-  
fion, you may then, but not sooner, ad-  
minister the *Cortex*, giving it at fuch  
Distance, and in fuch Quantity, that your  
Patient, if poffible, may take 4 or 5  
Drams, before the approach of the next  
Fit; as if the Interval exceed not 10 or  
12 Hours, you are to order  $\text{℞ij}$ . at leaft,  
if not  $\text{℞j}$ , where the Sick can bear it, every  
2 Hours, but if the fame is longer, once  
in 3 or 4: Observing diligently that you  
begin not before the hot Fit is over, and  
the Sweat breaks forth; that you are alfo  
as cautious in prefcribing it where you  
have not Encouragement from the faid  
*Hypoftafis* in the Urine, or that the In-  
termiffion is irregular and uncertain; for  
whilft the former is crude and uncon-  
cocted, you can hope for little Benefit  
by the Bark, and as little room to give  
it under dodging Intervals.

We have, I know, fome Gentlemen a-  
mong us, and thofe of Note too, I could  
name, who are very early, I fear fome-  
times overhasty, in giving of this Drug  
before

before the Fever Fit is form'd, or that they can have Satisfaction, there is more than *Remission* and *Exacerbation* thereof; and this altho' the Breast is straitned, the Breathing anhelous, with other Symptoms little favouring its Exhibition; for which they alledge the Danger by Delay, of missing an Opportunity for giving it at all afterwards.

But truly, Sir, I have seen so many Miscarriages, which I could impute to nothing more than the unseasonable use thereof, such as *Coma*, *Delirium*, Oppression on the *Præcordia*, tremulous Nerves and subsultory Tendons, with encrease of all the Symptoms; that being therefore deter'd my self, I would caution you against an over-forwardness, or till you are satisfy'd, the pretended Shiver was other than some nervous Rigour, the Heat a simple Exacerbation, the Sweat symptomatical, and the Respite a short and simple Remission only.

I must acknowledge, under this *Dilemma* I have been sometimes concern'd, that



that I have not comply'd with the Importunity of others, as to their Satisfaction, not my own, for giving this Remedy; but I have been much oftener pleas'd, that I did delay it, where quickly after I had reason to believe, it would have proved fatal to the Sick; and I think I may say, it has been seldom, if ever, that I repented on my own Part, not giving it till I was convinc'd by a second Circuit of the Fever, that the *Type* was form'd to justify the same.

As a farther Security to my Patient at such Times, I always apply Blisters, if there be room for them, or those lay'd on before have ceas'd their Discharge; as behind the Ears extending to the sides of the Neck, the Arms and Legs: the opening whereof will be a great Security to the nervous System in general, and to obviate the Symptoms thence arising.

Among these Fevers, there is none we more frequently meet with, or which carries with it a worse Aspect than that,

even in the beginning, attended with a languid Pulse, Oppression in the Breast, and an Appearance of a faint Rash like the *Rubeola* coming forth, and presently retiring in again, a ferretty Eye, with a confused Aspect, like one amazed: Soon after the Tongue grows black, and feels scabrous, yet without Thirst; and in few Days more, the Patient falters in his Speech, a crusty black Furr adheres to his Teeth, he makes a bilious, and sometimes pale, Straw-colour'd Urine, takes no Notice of any Thing about him, but lyes as it were in a neutral State, neither dead, nor scarce alive?

In this Case, I have been sometimes at a Stand, and doubtful what Method I should take, by which my Patient might be least endanger'd; for tho' the dry Tongue, the furred Teeth, and the parched *Fauces*, give the Signal of great Heat within, and seem therefore to indicate a cooling *Regimen*; yet the low and creeping Pulse, the chill and clammy Sweat about the Head and Face, the great Faintness and  
sinking

sinking of the Spirits, require seemingly the warmer Medicines.

Upon which Account, that I may proceed with the greater Security, I usually treat the Sick under such Prædicaments, as I observe our best Writers upon that Subject, did the *Pestilential*: Neither with *Theriaca*, nor yet *Mithridatium*, much less the *Egg Electuary*, and the *serpentary Root*: But the *Cons. Lujule* and *Lap. Contrayer.* adding thereto at sometimes a few Grains of Nitre, or when subject to *Deliquium*, Saffron, in a small Draught of the *aq. Lact. Alex. & Theriacalis*, edulcorated *cum Syr. Limon. vel e Cort. Citri*, or in place of this, I give ʒss, or ʒij. of *Raleigh's Confect*, with half as much of the *Pulv. e chel. Canc. C.* made into a Draught, with the same Cordial Waters, or a Bole with either of the Syrups, which I repeat once in 6 Hours, shifting the *Epispastic* from one Place to another, as the preceding are drying up.

But alas! how few under these Circumstances can we retrieve, either by  
this



this or any other *Regimen*, in Comparison of those who sink, a little farther Conversation with them who are thus seized, will convince you.

There is indeed a great Oversight, of which our common People are guilty, which is, that the Fever not burning out like the *sanguineous* or *inflammatory* Species, they are less careful to keep from the cold Air, till their listlessness to Action, insensibly, as it were, stealing upon them, they are unable longer to get abroad, yet will still be moving about House, or sitting by the Fire side, complaining they are giddy, faint and sick, for which some have inadvertently both purged and bled, in the usual Form of their other Disorders; but think themselves not bad enough to be confin'd to the Bed, or send for the Physician.

Many Scores of these I have found after several Days Illness, in their Cloaths crying out of extraordinary Faintness, with a scarce perceptible Pulse, and that often intermitting; when opening the

P

Breast,

Breast, I have discover'd a sort of pale marbling in the Skin, or rashy Appearance, by which, and the exceeding Languor attending, the Case was already become desperate; and the Medicines which at the first onset, with timely taking to the Bed, might have proved successful, are now directed to little Purpose.

To this eruptive of the nervous Kind, belong the *Rubeolæ*, or the red circular Spots, *instar Morsuum Pulicarum*, saving that the mark of the *Proboscis*, in the Center, is here wanting: They are sometimes of a deep red, at others pale or pink colour'd; also the *Miliary*, the large *Pustulous* and the *Petechial*: by these last you are to understand those brown, purple, and sometimes livid Spots, frequently complicate with the worst kind of the Small Pox, or attending other malignant Fevers; in which there appears a gangrenous Disposition of the Blood, these are much less in their Circumference than the *Rubeolæ*, seldom exceeding that of a  
large

large Pin's head, tho' both lye even with the Surface of the Skin.

As for those we call *ChrySTALLINES*, I do not take them so much for Harbingers of Danger, as denoting a *Lympha* which is tenacious, and not fitted to perspire, is detain'd by the *Cuticle*, in its excretory Ductus's arising from the *sudoriferous Glands*, or those which compose the *Papillæ Pyramidales*; and as the same in cold Weather, where a Person thrusting up his Sleeve suddenly, and exposing his Arm to the ambient Air, represent those in a deplum'd Fowl: So when by violent Exercise, or a more than usual covering of Bed-Cloaths, the same Person is thrown into a sudden Sweat, the serous Humour stopt herein, and unable by its Consistence to pass through, appears in these *Hydatids* or *guttule ChrySTALLINE*, without any other ill Symptom, when they are by themselves; tho' they are frequently interspers'd with the military Eruptions, from which they are easily distinguish'd by their diapha-



nous or translucent Appearance: These last having small red Bases and white Heads, and which, like the *Variola*, undergoing their States of Crudity and Concoction, the Matter being first serous, and then ripening, the Heads crumble off by the least touch of the Finger.

Between the *Miliary* and the Small Pox, there is a sort of intermediate Pustule, attending frequently upon these *nervous Fevers*; and which denotes them to be *Mali Moris*. It keeps out for some Days, and then dyes away like the rest, not disappearing, and again returning, as does the marbled Appearance and *Rubeola rotunda*, from both which it differs, as it does indeed from the rest, in a troublesome itching; and wherever this Disturbance goes along with an Eruption, excepting the Small Pox, I have observed there is less Danger, than where the Patient is altogether insensible thereof.

If we enquire now after the Nature, and Manner of these Eruptions, we shall find, that as in some others of her *Phænomena*,

*nomena*, Nature has kept these also as a Secret to her self, and all our *Philosophising* or *Mechanising* either, is but poor Conjecture, or jejune Argumentation.

Whatever gives Rise to them (as is very probable, some hidden *Diatheſis* in the Air rather than any of its obvious Qualities) puts the Blood under some new change of Texture; at least upon such peculiar Effervescence, as that certain Parts or Portions thereof are disposed to be thrown out by the *Emunctories* of the Skin; where being detain'd by the *Cuticle*, according to their several Sizes and Dispositions, they form various Appearances, which is all we know of her *Apparatus*, for their Exclusion; unless that we find them constantly specificated to the same peculiar Fever, unto which they appertain.

However, if you think your Judgment may be better inform'd by *mechanical* Solutions, take here an Explanation of one of our *mathematical* Physicians, Dr, *Pitcairn*<sup>f</sup>, in the following Words.

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<sup>f</sup> In his Elements of Physick, p. 111.

‘ Since the Blood is a Fluid, endow’d  
‘ with many small Parts, which can in  
‘ their perspiring affect the Organs of  
‘ Feeling, with a Sense of Heat, the Ra-  
‘ rifaction which always accompanies its  
‘ encreased Velocity, will also excite a  
‘ greater Heat than ordinary, so as to be  
‘ troublesome both to the Patient and  
‘ By-standers: And if a small part of  
‘ the Blood only can squeeze out to the  
‘ Skin, then Pustules or Spots arise, ge-  
‘ nerally of a red Colour: By Rarifica-  
‘ tion and Quantity of Motion, the *Se-*  
‘ *rum* is so attenuated, as to flow plen-  
‘ tifully out at the Pores; hence the  
‘ Fever terminates in Sweats; if the Pores  
‘ are more dilated, so as to receive also  
‘ Particles of *Bile*, then the Fever will  
‘ be solved in a Jaundice.’

Thus you have the *Mechanism* of the  
Heat, Sweats and cuticular Eruptions, at-  
tending Fevers. Whether the Philosophy  
of another great Man in his Way, will  
be more instructive upon the same Sub-  
ject,



ject, I know not, but shall present you with his Opinion thus<sup>t</sup>.

‘ As to the Nature and Manner of  
 ‘ Production of these Spots, we assert  
 ‘ in general, that all of them are the  
 ‘ Production of the Blood and nervous  
 ‘ Juice, smitten as it were by the Ve-  
 ‘ nom, and divided into grumous Parts,  
 ‘ as it happens in its Circuit to be seiz’d  
 ‘ on by the same ; for as much as the a-  
 ‘ nimal Spirits residing in both Liquors,  
 ‘ especially the Blood, are no sooner put  
 ‘ to flight by some malign *Aura*, or pu-  
 ‘ trid *Atoms* but a Coagulation is in-  
 ‘ duced on the now dispirited Liquors ;  
 ‘ even as Milk growing sour and curdled  
 ‘ by the admixtion of some acid Juice :  
 ‘ Upon which Account certain Parts of  
 ‘ the same thus alter’d by the said Ve-  
 ‘ nom, separate into Clots or Grumes, in  
 ‘ like manner as Blood extravasate or let  
 ‘ forth the Vessels, soon turneth black,  
 ‘ when presently the Motion of the rest  
 ‘ is hindred, not only in the Vessels ad-

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<sup>t</sup> Willis de Feb. ch. 13.

‘ joyning, but also in the Heart it self;  
 ‘ and by reason of the putrid Ferment,  
 ‘ other Parts are still lyable to the same  
 ‘ *Coagulum*.

‘ Now whatsoever is thus turn’d into  
 ‘ grumous Clodders, unless the same  
 ‘ presently be thrown forth, by giving  
 ‘ a check to the Circulation, must pre-  
 ‘ sently cause Death; but being cast out  
 ‘ to the Circumference of the Body, de-  
 ‘ prived of all Spirits, and lodg’d in the  
 ‘ Interstices of the Vessels, or their *Angustia*, it appears on the Surface per-  
 ‘ fectly mortify’d, representing Spots, as  
 ‘ sometimes black, at others purple; or  
 ‘ else having the Salt and Sulphur exalted  
 ‘ by the malign and pestiferous *Ferment*,  
 ‘ it effects some new Production, and  
 ‘ formeth Humours of divers Kinds.’

Whilst another † acquaints us, that  
 ‘ the same Thing happens to the Mass  
 ‘ of Blood at these Times, especially at

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† S. Pauli Digres. de Feb. Malign.

‘ the *Anastomosis* of the Veins and Ar-  
 ‘ teries, which befalls a frozen River,  
 ‘ when the Frost is broke; for as then  
 ‘ the Ice is melted by the kindly Heat  
 ‘ of the Sun, so Nature being about to  
 ‘ set upon the Disease, by the Benefit of  
 ‘ the animal Fire, and innate Heat, cool-  
 ‘ ing especially after the State of the  
 ‘ Disease, and burning no more so pre-  
 ‘ ternaturally as before, melts the Blood,  
 ‘ thicken’d and made rough by the febrile  
 ‘ Heat in the Veins, and as it were con-  
 ‘ gealing because of abundance of Salt  
 ‘ in the Extremities; and as a Torrent  
 ‘ or River carries Fragments of Ice ra-  
 ‘ pidly down the Stream, so the Blood  
 ‘ in the Veins throws off small Portions  
 ‘ of this preternaturally fixed Salt, which  
 ‘ are themselves indeed the Spots, or at  
 ‘ least make them. *Sed*

——— *Quis talia fando*

*Temperat a Rifu?* ———

Leaving these Speculations, as no Ways  
 instructive, I come to the *Regimen* of  
 these



these Fevers, which as in the foregoing, or the last I recited, must be mild and temperate, especially in the beginning, if not throughout; for where there is the dry or parchy Tongue, altho' the Pulse is low, and the Spirits languid, the Skin also bedew'd with a clammy *Mador*, I never could perceive good from the hot and fiery *Alexipharmicks*: So that I have always prefer'd the *Conf. Lujul.* with the *Lap. Contrayer.* adding sometimes a little *Crocus*: or the *Conf. Raleighanae* with the *Pulv. e chel. C. C.* to the *Theriaca-Mithridatium. Serpentar.* &c. tho' at some times, where the Sick has complain'd rather of Cold than Heat, I have directed a Tincture of this last, drawn in Treacle Water, after the following Manner, to be given by Spoonfuls.

℞ *Rad. Serpentar. Virg.* ʒij. *Contrayer.* ʒj. *Coccinel* ʒj.

*Infunde in aq. Theriacalis* ʒvj. & *Colaturæ addendo Syr. Croci* ʒʒ. f. *Mixtura, cujus Capiat Cochlearia* Ba-  
lorum

*lorum vel Haustum Spatiis intermediis.*

To the same Purpose, as I said before, I allow a Glass of Wine (mistake me not, I do not say a Draught of the *Aqua frigida*) in his Sweats.

When I am call'd early to these Fevers, and find the Sick complaining of a *Nausea*, I immediately prescribe a Vomit of the *Indian Root*, or *Rad. Ipecocuhannæ*: After which, the Patient being put to Bed, a Blister is to be lay'd between his Shoulders, not only for the Relief of his Head, but for the Security of his Nerves, from the malign Quality of the Fever.

The Vomiting over, some temperate *Alexipharmic* is given him, such as I have now mention'd; or as the Pulse shall dictate, together with the Temper in which I find him as to Heat or Chill: A day or two after, I discover the Eruption, which perhaps kept out of sight till now; but by the sighing, low Pulse, unusual Faintness, and sinking about the Heart,

Heart, to which the Patient points, I easily presage to what Species the Fever belongs : which difficult and interrupted manner of Respiration, with the Sickness and Languor, are the true *Characteristics*, and as it were *pathognomonical* to an eruptive Fever, either *Rubeolæ* or *Miliary*, as the Cough, Sneezing and watery Eye to the Measles, or the *Lumbago*, Vomiting and Head-ach to the Small Pox; nor have I, unless rarely, been deceiv'd in my Expectation.

On the third Day, if the Appearance keeps up, or the Rash holds fresh and red, the Patient seeming less oppress'd, I go on as before ; but when I perceive it pale, faint and retroceding, I appoint two more Blisters for the inside of the Arms, above the Elbows; and the next Day, if no Sweat breaks out, but that his Skin is dry, as also his Tongue, his Eye red, or the Blood crowded in the Arteries thereof, (a very discouraging Symptom) two more behind his Ears, reaching to the sides of his Neck. I also  
leech



leech the Temples, and shave his Head; which, tho' not pain'd after the manner of a common *Cephalalgia*, yet I find him in great Confusion, looking as it were hurried, and muttering somewhat out of the way, like a Person in a Dream, tho' his Eyes are wide open, and he gets no rest, lyes as it were stupid, and calls for nothing: At which Times, as I shall take notice presently, I think I have known Benefit accrue from an *Epispastic* continued some Days upon the back part of the Head.

And thus I go on with the same temperate *Regimen*, only varying the Form, as I see needful, and once at least in 48 Hours applying fresh Blisters to several Parts, till I perceive some sign of Concoction in the Urine, and a critical Sweat appear; which continuing, gives a turn for the better, the Eruption all this while keeping out, and running its usual Stage, according to the genius of the Fever, from seven to fourteen, nay, one and twenty Days, as the *Miliary* will hold

out, and then drying away themselves; nor am I all this while solicitous about Stools, rather guarding against loose ones: However if the Patient is very hot and restless, with Head-ach accompanying, I allow of Milk and Sugar to be thrown up as a Clyster, once in 3 or 4 Days; if the exceeding weakness of the Pulse does not contra-indicate.

About the Close, when every Thing seem'd to take a fatal Turn, you have frequently an *Aphthæ*, which may be conjectur'd coming on, from the great Dryness of all Parts of the *Fauces*; but especially, those more backward, attended with some Difficulty in passing of his Liquors: When this proves white, and separates kindly, after few Days, the Patient has still a good chance for an Escape: But if black, shining or glassy, spreading farther over the *Palate*, too long durable; or if casting off, returning again, there is little to be expected as to Recovery.

This Thrush is not to be meddled with, but suffer'd, like Fruit duly ripened, to fall

fall off it self; nor can I advise any Thing unless a little of the warm pectoral Decoction, to be thrown in at these Times: For Nature, who has found out the way of this particular *Crisis*, will, in her own Time, best fit it for throwing off, which Art may possibly interrupt, by a too hasty Separation, from the Use of maturing *Gargarisms*, or fix them faster by *restringent* ones.

As the *Aphthæ*, thus appearing of a mild and tractable Disposition, has ransom'd many, so others, as I have already noted, after a desperate Struggle of some Days, the Fever taking the Type of an *Intermittent*, have thereby escaped; of which, with the Method of its Exhibition, and the time of taking off the same, by the *Cortex*, I have already made mention. But when neither of these present, and that the Pulse still flags, the *Tremor* encreases with *Subsultus*, the Tongue falters, he lets go his Urine, falls into a *Coma*, the Features sink, as does the Sick down in his Bed, he gathers up the Cloaths,

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picking



picking them with his Fingers, his extreme Parts are cold, as are his Sweats : what Hopes remain? Or what can we prescribe, that will avail? Yet even here you must not give him up as absolutely lost, how great soever may be the odds against him, for Reasons with which you shall be presently acquainted.

These, Sir, are the Fevers which have ravaged our City of *London*, through all the Quarters of the Year, for many of those past. These have been a sort of *stationary* Fever with us, whatever *Inter-currents* have passed between : And, as I may say, *Epidemical* among us : These like a milder *Pest* have carry'd off great Numbers of our Inhabitants, insomuch that not a quarter Part, who have been seized, whatever Management they underwent, have recover'd from the same ; or if they have, (*ex Luto quasi Meliore formati*) they have been indebted, as remark'd above, to an *Aphthæ*, or else the Fever of it self, fortunately changing from a *Συνοχὴς* to a *Συνοχὴς*, and either gradually,  
perspi-

perspiring off its *Fomes*, or coming to intermit, has had its Ferment extinguiſh'd by the *Cortex*.

Nor truly can I ſay by way of *Prognostick*, that I could ever gain much Aſſiſtance from *Uroſcopy*, at theſe Times, ſo as to form any certain *Præſagium* thereby; for this at ſome times appears pale and crude; ſometimes wheyiſh, at others turbid; often a promiſing *Enæorema*, and as often a kindly *Hypoſtaſis*: Whilſt yet the Fever ſtill goes on the ſame. How frequently are we deceiv'd by an offer therein towards the *lateritious* Sediment, with the true reſemblance of a *Paroxyſm*, ſuch as the Chill, the Yawn, the Heat and Sweats? yet all ſuddenly going off, and in one Night's time changed for the worſe, with *Subſultus*, *Delirium*, *Spaſm*, and the direful train of nervous Symptoms, preſently ſucceeding.

So fickle are our curative Indications: So inſcrutable Nature in her Turns and Changes, who ſcarce leaves any Thing but the Pulse to guide us, and that too, (tho' not ſo often) ſometimes fails us.

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The next I intend to speak to, is the *intermitting* Fever, which I have differenced before, as *primary* and *secondary*: And this last I have already observed, where I took notice that by the same, was to be understood any of the *continēt* Kind, taking the Shape thereof, and admitting the same Cure, *viz.* the common *Febrifuge*. By the *Primary*, you are to understand what our People call an *Ague*: A Distemper so well known, as to want no Description; tho' in its Cause, at least its Appearances, and Returns with the *Gnomon* on the Dial to the same Hour, as intricate (if not more so) as the rest.

No wonder then that in the Ages of Ignorance and Superstition, a Disease that carry'd so much resemblance of *Inchantment*, should be set upon by *Charms* and *Incantations*: Or that Physicians themselves should give into the same, as they did in others, where there seem'd more of the *θεῖον τὶ* or unaccountable: As the *Epilepsy*, which was named *Morbus Divinus*, also *Passio Sacra*, the *Chorea Sancti Viti*,



*Viti*, and the *Plague*, with sundry others, undertaken the same way: Hence also the Rise of *Amulets*, with the *Pericarpia*, still in use among some, and countenanc'd by the Success of Experiments luckily tim'd, the Disease going off at that juncture, or owing merely to the force of Imagination impressing the Spirits, and thereby giving such surprising turn to the Humours, that many have been thus freed, insensibly as it were from these Distempers.

I need not tell you, what a Handle this has been made of late, to abuse our credulous People, with *Necklaces* to hasten the cutting of their Children's Teeth, together with a *febrifuge* Liquid, bound upon the carpal Artery, to remove all sorts of Fevers, without other Medicines; *Gout Stones* to be carry'd in their Pockets, when the Vender has pickt the Money out; with others as ridiculous, our News Papers are daily full of; but in an Age of so much Light and new Discovery, 'tis less admirable these *Phænomena* of *Agues*

should be *mechanically* solved, whether truly or not I will not say: but this I am sure I may, that their Cure, by a lucky Discovery, is now more successfully enterprized than heretofore: When the Cause being placed in some certain Humour of the Blood, as *Phlegm*, *Choler*, *Melancholly*, giving rise to the diverse Returns, *viz.* daily, every third or fourth, so much Time was taken up in preparing the said Humours, by some aperient Medicines, before they were fitted for Evacuation, by *specific Catharticks* also, as the *Phlegmagogue*, *Cholagogue*, and *Melanagogue* Draughts, or Aposems: That the Sick was hereby miserably harras'd between his Distemper and his Doctor, and at length destroy'd; insomuch that the *intermitting* Fever was in those Days as truly an *Opprobrium* to the Physician, as the *Gout* in ours. And if the Patient was at length set free, as by the advance of the Spring Season, the Strength of Nature, or otherwise, it was rather owing to her, than the Undertaker.

But

But now a word or two in the way of Explanation of the Symptoms of an *Intermittent*, which I shall give you first from one of our principal *Mechanicians*, Dr. *Pitcairn*, who in his *Elements* lays down the following, founded upon *Belini's* 20<sup>th</sup> *Proposition* in his *Tract. de Feb.*

‘ The sense of Cold in the attack of  
 ‘ an Intermittent, must proceed either  
 ‘ from the Obstructions of the capil-  
 ‘ lary Vessels, about the Extremities of  
 ‘ the Body, or from the Blood’s being  
 ‘ too thick in those Parts: But since the  
 ‘ Pulse is also low, or the Artery but  
 ‘ weakly distended, the Blood must be  
 ‘ less rarify’d; whence that Obstruction  
 ‘ is necessarily from too great a thick-  
 ‘ ness of Blood: But when the Heat af-  
 ‘ terwards arises, the Lensor being washed  
 ‘ out of the Arteries, into larger Veins,  
 ‘ where there is more room for Rari-  
 ‘ faction, and from thence into the Heart  
 ‘ and Lungs; and the Heat being per-  
 ‘ ceived in the Parts nearest the Heart,  
 ‘ where the Velocity is greatest, sooner

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‘ than



‘ than in the Extremities, and most re-  
‘ mote Parts : It is manifest that the Mo-  
‘ tion and Rarification of the Blood is in-  
‘ creased; whereby the obstructing Vif-  
‘ cidities being broken, Sweat breaks out,  
‘ and there is an end or determination  
‘ of the Fit.’

But farther, as to the stated Returns, the *Criticon* tells us, that the febrile Matter, which is put off thus periodically in different Individuals, cannot be capable of equal Attenuation, in equal Times : Some requiring 4, others 10, others 20 Days, before it is ripen’d, and comes to its state of Exclusion, which holds true in *continual* Fevers : And since *Agues* are but repeated Fevers, requiring the same Space in the whole; tho’ interrupted, or at different Times, which *Sydenham* had formerly remark’d, and whence our Author has borrow’d the same; we may conclude the Blood’s mixture so very heterogeneous, as to contain several Quantities of this Matter, each having its different Degrees of Cohesion, altho’ of  
the

the same Species : One Parcel of which is already fit for Exclusion ; another not till to morrow at the same time or longer : Hence the exactness of Turn, and the due distance of Fits : hence *Tertians* change into *Quotidians* at some times, and *vice versa* : hence it is we often see 6 or 7 Fits and no more : hence its longer Duration from a greater Quantity of these unequal Cohesions, requiring exactly so many Circulations, before their Maturation : So that suppose a Person (*taking in a little Algebra*) seized with a *Tertian*, and that the Quantities of Matter be express'd in the Letters following, *a, b, c, d, e, f, g* ; let us suppose (*for we are still in the way of Supposition*) the Particle *a* to begin on *Monday*, then the Particle *g* will produce a Fit on the *Saturday* sev'n-night ; if they are cur'd at *g*, then *g* has required 15 days Maturation, and therefore must *a* too ; hence it is we are often disorder'd for some days before Fevers and Agues. <sup>w</sup>

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<sup>w</sup> Criticon Febrium p. 83.

Again, saith he, some deny that there is an *acid* in the Blood, altho' the same is apparent to the Senses, in several of the Humours secreted thence; by which being coagulated, there ariseth this sense of cold in Horrors; and the Reason why it returns periodically, Dr. *Willis* will have owing to a certain quantity of the depraved Juices, necessary to produce a *Paroxysm*; and that such quantity is gather'd at a stated Time, according to the genius of the *Intermittent*, as in one Day, two or three.

The last Opinion I shall quote here, relating to the regular Returns of these Fevers, shall be that of *Helvetius* \*, ' who  
' placing the cause of Fevers in general, as we have formerly observed in  
' the *lymphatic Juice*, clog'd with some  
' foreign Humours, which flowing into  
' the Vessels of the *primæ viæ*, come after to mix with the Blood: First, thick-

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\* Essay p. 20.



' ning it by Means of that Sourness and  
 ' Crudity they bring along with them;  
 ' by which its fermentative Motion is a-  
 ' bated, and consequently the Heat of  
 ' the Parts, with the Strength of the  
 ' Pulse; thence succeeds the Coldness with  
 ' slowness thereof, shivering, yawning  
 ' with other Symptoms, which go be-  
 ' fore the *Paroxysm* of an *intermitting*  
 ' Fever. This is the State which is called  
 ' the *cold Fit*; at this time the Humours  
 ' in the Blood cannot long circulate, but  
 ' they must dissolve and meet with a  
 ' number of Particles disposed to fer-  
 ' ment: They therefore cause a Fermen-  
 ' tation, whose briskness is in propor-  
 ' tion to their Quantity: This is what  
 ' kindles the Fever and renders it more  
 ' or less burning: And when all these  
 ' Particles have boiled for some time,  
 ' and have no longer a Disposition to  
 ' ferment together, the Juices cease to  
 ' be agitated, their Tumult is quieted,  
 ' and their natural State returns. During  
 ' the *Paroxysm*, these indigested Hu-  
 ' mours,

‘ mours, which were intangled in a thick  
‘ *Lympha*, and detain’d in the *lymphatic*  
‘ Vessels, do not sufficiently partake of  
‘ the general Motion of all the Fluids;  
‘ so that what passes in the Blood, is not  
‘ able to dissolve them, they requiring  
‘ a fixed and limited time for their Di-  
‘ gestion and Dissolution: And this is  
‘ what makes the *Type* of intermitting  
‘ Fevers so regular; so that the difference  
‘ between the *continual* and *intermitting*  
‘ Fever, consists in this (*if we may credit*  
*this French Author*) ‘ that in the first,  
‘ the Humours are thinner and more dis-  
‘ engaged than in the last, hence those con-  
‘ tinue to disengage themselves without  
‘ Interruption; whilst these cannot, unless  
‘ at stated Times or regular Periods.’

What sort of *Mechanism*, or what *Philosophy*, we have here, to solve the *Phænomena* of *intermitting Fevers* or *Agues*, I shall leave you to judge: Whilst on my own part, notwithstanding all that has been here recited, I must still believe the same one of Nature’s *Arcana*, or hidden  
Myste-

Myſteries : Nor do I conceive it of great moment to pry farther thereinto , ſince a kind Providence has directed us to an *Antidote ſpecifical*, if any thing can deſerve the Name ; or by which the Diſeaſe is ſubdued, as we ſay, at once ; the manner of whoſe Exhibition has been ſo well deliver'd by *Sydenham* and others, and ſo continually in Uſe among us, that I may doubtleſs ſave my ſelf the trouble of more Words about it. I am ſure no *Theory* nor *Hypotheſis*, either *Physical* or *Mechanical*, gave the firſt hint of this divine Remedy, which was found out merely by *Obſervation* ; and from repeated Tryal, brought into Practice : And after the ſame is once diſcover'd, we then go upon ſolving *Problems*. Thus according to one of theſe, *what-ever hinders Coagulation of the Blood, will cure theſe Fevers ; and if you bleed upon the Cortex, the Blood will keep its Fluidity : The like of Crab's Eyes, Sal*

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⁊ Idem Ibid.

*Absynth.*



*Absynth. & Armon. which hinder the Blood's Coagulation.* Yet these, I fear, unless very rarely, stop the Fits of the same Fever; but if by their property of preserving the Fluidity of the Blood, this Alteration is effected, how comes it that *Alum*, of which this Gent. makes mention, among some other *Febrifuges*, so frequently produces the like? Whence others have, with more Reason, taken up a persuasion, that the Cure is here brought about by its power of constipating, or locking up the *Ferment*, that gives Rise thereto; and this is doubtless very plain to our daily Observation, that we have not a more noble *Ischæma*, or blood *Stauncher*, where the same arises from any inward Breach of the Vessel, or sweating through by Reason of its Acrimony and Tenuity, especially if attended with a feverish Heat, than this of the *Cortex*: So vain and precarious are most of our *Hypotheses*; so diverse and disagreeable our Argumentation about some physical Appearances; from which we  
may

may obtain indeed this Satisfaction, that both the Nature or real Essence of most Diseases, as well as the manner of the Operation of Medicines, or the Remedies which subdue them, are hidden from us: And that we ought to be exceeding cautious, lest in attempting the Solution of such *Problems*, as Nature herself has not sufficiently discover'd to us, we do not lay our own Ignorance open, instead of her Transactions.

This one Thing however let me farther advise, with respect to the *Bark*, that before you give it, the Stomach be well cleansed off its slimy Contents, by a Vomit, the Morning or Evening before the Fit; and indeed I think it were much to be wished, that we were Masters of some Preparation thereof, that might conceal it from the Knowledge of the Patient, and render it more facile to be taken by some of these. As no small Advantage might accrue hereby to *Pharmacy*, so likewise to certain prejudiced People, who are to be cheated in-

to Health, and will by no Means admit of it knowingly, altho' we cannot other-ways help them.

The *Infusions* or *Tinctures* and *Decoc-tions* thereof, I have try'd often, but I cannot say with that Certainty and De-pendance, as when taken in the Substance.

I have seen also an *Extract* here in Town, that has answer'd much better than either of the former; but it is difficult to hit rightly, or preserve a due Consistence, with full Energy; being so apt to grow dry and resinous, and to crumble, unless moisten'd with Spirit of Wine, so as to form it into Pills.

Some put a large Quantity, as 2 or 3 pound of the best *Bark* grossly powder'd, into a suitable one of rectify'd Spirit: Which having placed in *Balneo*, the resinous Parts are then dissolved, and a deep rubicund Tincture drawn; after which the *Fæces* are boiled in a watery *Menstruum*, to get forth its stiptic Parts, which being strongly exprest, and the greatest part of the Spirit drawn off, in



order to preserve the same for the like or other Purposes, the remaining *Tincture* is mix'd with this *Expression*, and gradually evaporated to an *Extract*, a Scruple of which in 3 Pills, or half a Dram at most in 4, for grown Persons; with half this Quantity for Children, has answer'd double the same of the Powder.

Whether the *Magma* calcin'd, would afford any Quantity of *fix'd Salt*, I know not, never seeing it try'd; but if it would, and were added to the *Extract*, as in *Raleigh's Confection*, it would, if no otherwise, certainly contribute to keep it from growing hard, and so very brittle.

Of near Resemblance to the foregoing, or much the same, is this ensuing Recipe from Dr. *Pitcairn*, which he terms a *French Preparation* thereof: And gives from ʒ℥ to ʒi. 4 Doses, in the interval of the *Paroxysm*: Having once or oftner vomited the Patient, before the Exhibition thereof.

℞ Cort.

℞ Cort. Peru crasso modo pulv, ℥ij.  
Indatur Matraccio, & affunde Spir.  
Vini ℥ij. Sit vas tertia parte va-  
cuum, quod sæpius debet agitari.  
Stet bene clausum in Arena mode-  
ratè calida, frequenter, ut dictum est,  
concutiendo: & cum Spiritus pur-  
pureum Colorem acquisiverit (Signum  
Solutionis partium Corticis resinosa-  
rum) augeatur Calor, adhuc conti-  
nuando donec Menstruum plene sa-  
turatum est: dein frigescat vas, &  
colatur Tinctura bis terve per pan-  
num lineum, fortiter exprimendo, &  
infunde Colaturam in phialam alte-  
ram. Indatur residuum in Matra-  
cium, & iterum colloca super Are-  
nam calidam, tunc affunde Vini Gal-  
lici ℥ij, & concute ut antea: cum  
tam Colore quam Sapore, apparet  
Salinas partes Corticis absorberi,  
coletur ut prius. Misceantur liquores,  
& unà indantur vitreo Cucurbito su-  
per Calorem temperatum, evaporen-  
tur,

*tur, dum partes resinosa lateribus vasculi adherentes, removentur, ut in fundum subsideant; & tandem cum pars major humiditatis hoc modo sit absumpta, infunde residuam in vitreum vasem, super Arenam ponendo, & addendo ℥ij. Syr. e succo Chermes, leni agitatione & Calore evaporetur reliqua pars humiditatis ad Consistentiam Extracti.*

To each Dose of this Extract, or each other, if a *Diarrhœa* happens, may be added half a Grain or a Grain of the *Extract. Thebaic.*

A thin Extract also of Gentian Root with Chamomile Flowers, he says, may be substituted in the Place of the foregoing, where that succeeds not; or this Mixture of Dekkers, cry'd up by some.

℞ Cort. Lign. Guaj. Fraxin. ana ʒj.  
 Extr. Rad. Angel. Gentian. Antimon. Diaphoret. sal. Vol. Armon.  
 ana ʒi. Myrrh. ʒij. m. f. Pulvis in octo Chartulas.

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The following from *Fuller*, I have known sometimes take Place, when the *Bark* has been ineffectual.

℞ *Sal. Absinth.* 3℞. *Antimon. Diaphoret.* 3j. *flor. Chamomel.* 3ij℞. *m. f. pulvis intotidem (viz.) octo Chartas.*

*Bates* has another, which he calls *Febrifugus certus*, vide *Pharm. Bat.*

The *Empirical Cure* is this, which has often answer'd, and was a great Secret with *Dr. Brooks*.

℞ *Aluminis* ʒj. *Nuc. Mosc. pulv.* ʒij. *Sacchar.* ʒ℞. *m. f. Pulvis dandus quarta quaque hora cum quolibet Vehiculo in intervallo Paroxysmi, vomitorio præcedenti.*

To the *Intermittent* appertains an *Anomalous* one, frequently observed in those Seasons, where the Genius of the *stationary Fever* inclines that way, or becomes *Epidemical*, which it must surely have

have been about the time when Dr. *Morton* pen'd his Observations.

It is called *Anomalous*, not for its irregular Returns, but its appearance like a Counterfeit, under the shape of some other Disease, as Head-ach, Pain in the Side, Cholick, Cholera, Nephritic Illness : Nay, even a Tooth-ach and Ophthalmy, which I have seen several Times coming periodically, and miserably afflicting the Patient for many Hours, then leaving him till the next return : So that indeed in every Illness afflicting the Body at stated Periods or Intervals, altho' the usual Symptoms of Shivering, Heat, or Sweats, do not appear, this Remedy ought to be tryed, and rarely fails, especially where the Urine, by its brick-dust Sediment, betrays this *Proteus* like Enemy, or conceal'd Ferment, to be got into the Blood : And surely those Practitioners know very little of this Drug, who use the same no otherwise than as a *Febrifuge* for *Agues* and *intermitting* Fevers : Since there is scarce a better Remedy to be met with,

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for

for giving a Springiness or new Life, as it were, to the feeble and impoverish'd state of the Blood, to bind up its lax Texture, and secure it from breaking forth its Boundaries, when by its Heat and Acrimony (as we have remark'd before) it is liable thereunto : Nor in *hysterical* and *hypochondriacal* Cases, when a Constitution has been shatter'd by some *chronical* Illness, whereby both Solids and Fluids have been much weaken'd in their Tone, have we a more noble corroborative or restorative Medicine, than the Bark, given in proper Quantities, and at due distances of Time.

This farther I would also have you take Notice of, as you may of *Opium*, viz. where there is a proper Indication for them, there is hardly any thing to contra-indicate their Use.

Thus as no Man in his Senses would venture an *asthmatic* or a *phthisical* Person, at other Times, with a Grain of *Opium*, or a Dram of the *Cortex*, by reason of their constipating or incrassating Qualities :



Qualities: Yet in a very extreme Cholick, or other Spasm, as the former must be directed, so to put by the *Paroxysm* of a regular *Intermittent*, we may also safely administer the latter. This only by the way.

The last of the Fevers I shall touch upon, shall be the *Hectick*, which the best Writer upon that Subject, Dr. *Moreton*<sup>2</sup>, has distinguish'd as *original* and *symptomatical*: The first of these he tells us is also divided into two, an *Atrophy* and a *Consumption of the Lungs*.

But whoever rightly considers, will find few Instances of this Distemper, which are not some way *symptomatical*, or that take not their Rise from some preceding Illness.

Thus when a Tubercle, one or more, through Obstruction of some excretory Ducts, formed in the vesiculous Substance of the Lungs, increases and begets a diffi-

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<sup>2</sup> Phthisiologia.

culty in breathing, which after a while inflaming, a *Symptomatic* Fever is occasion'd, till at length impostumating, the Blood being tainted or imbued with certain purulent Particles in its Passage, a *putrid Fever* accedes to the *Inflammatory*, with all the dire Train of Symptoms following, and gives rise to this particular Denomination of a *Consumption of the Lungs*, because that is the Organ where the Malady began; but if the like Aposteme, whether by Stones or Inflammation otherwise stirred up, is formed in the Kidney, a Case very common, there is surely as much Reason to term this a Consumption of that Part; or suppose in any other *Viscus*, than which nothing more so, and attended with the like mischievous Symptoms, as polluting the Blood, kindling a Flame therein, &c. Why, I say, may not these, by the same Right, be named Consumptions of the several Bowels where the Abscess is first form'd, and by which the Blood and nervous Fluid are in like Manner

Manner vitiated and render'd unfit to be assimilated in the Way of Nutrition, or supply of the daily Waste upon the Parts?

I own the Aposteme of the Lungs, being the most common on the Account of its spongy and lax Texture, liable to be stufft with fuliginous Recrements, and foreign Corpuscles drawn in with the Air, and a Breach in its Substance, through the constant Motion in Respiration, hardly, if ever, consolidated: This, I say therefore, in the Way of *Emphasis*, is call'd a *Consumption*, and that *original*, tho' no more so, than those from *Abscesses* elsewhere, which take their Rise from some other Distempers going before; such as the *Scrofula* or *Struma*, the *Scurvy* or other saline *Discreasy* in the Juices of the Blood, internal *Hæmorrhages* from a Solution of Continuity in some of the Parts, by which the Vessels are laid open; the *Lues Venerea*, *Fistulas*, the Consequence of some inward Apostemation, which



cannot be healed, nor with Safety laid open; *Cachexys* or *Chloroses*, with whatever heaps up Obstructions in the *Mesentery*, whereby the chylous Liquor is either soured, intercepted, or work'd up, by Means thereof, into a putrid and preternatural Effervescence, destroying the Balsam of the Blood, and kindling this particular Fever, which being slow and lingering, the Patient is often deluded with vain Hopes of his Recovery, when his Case, to the discerning Physician, is truly hopeless and incurable.

The nervous *Atrophy* takes its Rise more particularly from some Defect in the Fluid of the Nerves; for as this, together with that of the Blood, seem to contribute to the Motion of the Body, as is manifest by the Ligature made upon the great Artery, by which the Passage thereof is hinder'd to the Limbs, as well as on those of the Nerves, whereby the Parts below are deprived of the same, so both surely have their Share in its Nourishment; and as the latter, pol-

luted some how, or vitiated in its *Crafsis*, gives rise to the heftical Disorders of which we are now speaking, and have already enumerated; so the first, after a more peculiar Manner, is concerned in those we call *Consumptions* of the *Nerves*, or *nervous Atrophys*, derived from the Greek, *ex a particula privativa, & τρέφω nutrio, i. e.* without Nourishment, the Distinction between which two is so absolutely necessary, that unless he observes the same, no Man can direct a proper Regimen for the Cure, which is, at least ought to be, as different as that of the *sanguineous* and *nervous Fever*.

For as the *Consumption*, so call'd, of the *Lungs*, and others, proceeding from Inflammation or *Abscess*, which lay this Foundation for what we call a *Hectick*, fixing upon the Habit of the Body in general; as these, I say, require the most temperate, humecting, refrigerating and edulcorating Remedies, to soften the *acrid* Humors, and extinguish this predatory

datory Fire kindled therein; such, for Instance, as the *Sarsa* and *China Decoctions*, the *Absorbentia*, with the *Ass's Milk*, *Almond Emulsions*, and the *Milk Diet* in general: So the *nervous*, in which the Sick complains rather of Cold than Heat, calls for a warmer Method, as *Chalybeats* and *Bitters*, to comfort and fortify the Digestion, and mend the Appetite; which being, as it were, pall'd, is neither craving for Food, nor able to concoct rightly what is receiv'd. Hence in general the *Atraphia Partium* is a Consequence of the *Atonia Nervorum*, and the *Marasmus* ensuing these *Consumptions*, owing, as I said but now, rather to some Fault in the *nervous*, than *sanguineous* Fluid, taking its Beginning oftentimes from Grief, Melancholy, or some other Passion, without a Trespass in the other *Nonnaturals*; so that after all, it may be made a Question, whether we have any *Consumptions original*, unless the *hereditary*, or those which from the Parent are impress'd on the

*Prima*



*Prima Stamina Vitæ*, in the Offspring  
*Fœtus*.

From both, however, whether *sanguineous* or *nervous Consumptions*, we may, in the Way of *Corollary*, make this just Observation; that since there is no solid Part of the *Animal Compage* destroy'd thereby, the most thin and meager Person having the same Number of Muscles and Membranes as the corpulent, not a single Fibre, unless in the Case of Ulcers, either external or internal, destroy'd, all which is lost in Weight being the *Parenchyma* so call'd, made up of divers Liquors, lodg'd in their several Vesicles or Cells, together with the Fluids passing in their proper Pipes: These, I say, which like a *Tomentum* or Stuffing, give bulk as well to the Muscles as to the Viscera, and other the contain'd Parts, now wasted, dry'd up, or drain'd away, their membranous Enclosures coincide, as do the *Vesiculæ* themselves, leaving little other than dry Skins and Fibres; a plain Indication,

cation, surely, that the whole Body, excepting the more stable Parts, the Bones, is really *vascular*, and that the Cure of a *Pthipsis*, or, indeed, every *Consumption*, taking the Word in its greatest Latitude, or vulgar Acceptation, is only by a supply of fresh Juices to recruit or fill up these *Vesiculæ*, and repair the Waste, if we knew which Way the same might be accomplish'd; and this possibly contains as much of the useful *Mechanism*, as is necessary we should be acquainted with.

We have had many Treatises of late publish'd upon this Topic of *Consumptions*, with what View, in Regard either to public or private Gain, let the Performances speak for themselves: The old Knight's, as are all, I suppose, he now intends, being written for the Use of the Gentlewomen and Country Divines (pardon my Mistake in setting the Ladies first) must surely turn to a public Good; but you know, Doctor, as well as my self, that it has been too much in Use for  
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some of much Leisure or little Business, to single out a popular Distemper, on which to harangue, no Matter how, in Expectation that the Sick of such Disease may be thereby allur'd to consult them; the Title Page of which being often advertis'd, supplies the Place of a *Quack-Bill*: But since I understand this particular one of the *Consumption* has been lately handled by a *Mechanician*, and all the several Gradations thereof, explain'd by *Newtonian Principles*, I will hope at least we may live to see this cruel Article left out of our *Weekly ones*, by which certainly more Honour will redound to our new *Microcosmeter*, as well as Emolument to the whole Kingdom, than has ever happen'd since the Foundation of *Coos*, renowned for the Births of those two great Men in their Professions, *Hippocrates* and *Apelles*.

I shall now take the Liberty to break off the Thread of my Discourse concerning *Fevers*, either in *general* or *particular*, which yet, to render as useful



ful as I can, I would not, methinks, leave without some farther Hints as to those common Evacuations, practis'd in their Cure, and taken from the Method which Nature has been observ'd to use her self, as I find them summ'd up by Dr. *Freind*<sup>a</sup>, in the Manner following.

The Evacuations, saith he, which *Hippocrates* observ'd to fall out among those he attended under *Fevers*, were these following, *Bleeding, Sweating, Vomiting, Abscess, Spitting, Stools, and Urine.*

These are set down as Marks for our Imitation, whereby to relieve *Nature* oppress'd, in such Way as she seems to have indicated herself.

As to the first, by what Part soever, if the Eruption of the Blood be *critical*, as sometimes falls out, we are hereby encouraged in *Fevers*, especially of the *inflammatory Species*, to draw off the same in such Quantity as the Patient's Strength will allow, and indeed in Cases of *Repletion*, or where there is

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<sup>a</sup> Comment. de Febriculis.

*Plethora,*

*Plethora* either *general* or *particular*, by which the Vessels are distended from the Quantity or Rarification of the circulating Fluid, what can be the Remedy, unless *Depletion* of the same, or *Inanition*, to such a Degree as the Pulse directs, which at the Beginning of the Seizure, whilst this is strong and high, may be done with Safety; or if seemingly depressed from Fullness of the said Vessels, at this Time with as great Security and Advantage, of which before.

As to the Manner or Way, whether *derivative*, *i. e.* drawing more towards the Parts affected, or *revulsive*, *i. e.* calling off the same by one directly contrary, or opposite: the Nature of the Complaint, and the Part grieved thereby, will best demonstrate; about which, also, I would advise you should look over our Author's second Commentary, already refer'd to.

The *French*, and some other Foreigners, in almost all the *cephalic* Disorders, practise this *Revulsion*, by opening the  
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Veins

Veins of the Feet, which is rare with us, especially in Men, we rather choos<sup>ing</sup> the *Derivative* at such Times, as by those of the Neck; or content our selves with the general Depletion from the Arm, the Circulation of the Blood rendring these Disputes about the Election of the Vein less momentous.

The second Evacuation taken Notice of by *Hippoc.* as the *Crisis* of Fevers, is that of *Sweat*; but then you must observe they were those of Nature's own raising; and whether these put a final Conclusion to the Disease; or appear'd only at its going off, is not observed; but whether so or not, 'tis plain, according to our learned *Commentator*, that in the *Greek Hippocrates* there is no Mention of any *Sudorific* Medicine, and in the Latin one, falsely ascribed to him, only once.

With great Vehemency, therefore, does this Gentleman, in his ninth *Comment.* exclaim against them, as fit only for *Quacks* and *Chymists* to make their  
boast



boast of, together with the practising Gentlewomen in the Country, or the understanding Nurses here in Town: And altho' I cannot come entirely into the Opinion of this worthy Man, as to some Particulars about this Matter; yet I want no Arguments to persuade me, that the common Method of forcing out Sweats, by their boasted *Diaphoretics* or fiery *Alexipharmics*, in the Beginning of Fevers, putting the Patient, as it were, into a hot Press, under an unusual Weight of Bed-cloaths, has been highly destructive; and I cannot choose but admire that any one related to the Profession, should give into this vile Custom, which tho' not in so great Degree, since the Time of *Sydenham*, yet still, as the same Person observes, too much prevails among us: For if the *Cocta non cruda*, mention'd by *Hippocrates*, are the Humors only fitted for Discharge, how can we think that Nature, who is tenderly to be led on, and not driven by any Means, can at the

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first Dispute with her Enemy, have made room for his Expulsion? Or what is this but taking the Work by Force out of her Hand, and (putting her by the Way she was taking to save) to destroy the Sick?

Do we not generally find that all these hasty Sweats are *symptomatical*, seldom lessening the *Fomes* of the Disease, but encreasing the same? Or what do we hereby, but quicken the Motion and Heat of the Blood, driving it with greater Force to the Head, and exciting either *Coma*, *Vigil*, or *Delirium*?

Let me therefore importune you, in the Beginning of the Fever, not to meddle with any *Sudorific*, unless a Draught of warm Sack-Whey, or other diluting Liquor, nor to suffer more Cloaths upon the Patient than he has been accustomed to; neither yet to administer (which for Form sake must be comply'd with) any Medicine but the foresaid *Pulv. e Chel. Canc. c.* the *Cons. Lujulæ* with *Niter*, especially in a *sanguineous* or *inflammatory*

*flammatory* Fever, under the Notion of *Alexipharmics*, or *Sudorifics* either, and then wait for *Nature's*, or the *critical Sweats*, which breaking out about the Time of the Urine's Separation, may bring good Tidings with them.

It must be yet granted, to find the Patient with an agreeable Damp, or a moderate Breathing, through the whole Course of a Fever, is more eligible than the dry Skin, with great Heat and Burning, unless under a *Paroxysm*, before the Sweat breaks out; since it is very manifest that nothing can go well at these Times with such a Temper: So that notwithstanding I am as much an Enemy to the hot and fiery *Alexipharmics*, or the *Diaphoretics*, so called, as the Doctor can be; yet I must differ from him in this, of thinking it so rare for Fevers to be determin'd by *Sweats* only; being persuaded in my self, that the greater Part by far have had no other perceptible *Crisis*, than that of the *sensible Perspiration*, or that the same ex-



ceeds all other Evacuations, whether by *Bleeding, Vomit, Abscess, Spitting, Stools,* or *Urine*, here mention'd by *Hippocrates*, put together in the Computation: Nor can I find the Doctor himself, after all he has said so rigorous, as utterly to reject the more mild and temperate Remedies, now in request with us, under such Denomination, as you may perceive by his own Words.

*Nollem hæc quæ hætenus dicta sunt, ita accipi, quasi nulla in Febris curandis Remedia, quæ Sudores eliciant suaderem: Etenim quæ mediæ materiæ sunt, & temperata habentur, multo cum Emolumento adhiberi & posse & debere, haud inficiar. Ista de quibus antea dictum est (nimirum Rad. Serpentar. Sal. C. C. & similia) cum utrinque a Mediocritate nimium absint, tanquam plane perniciofa, ex Medentis supellectile, penitus rejicienda sunt.* <sup>b</sup>

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<sup>b</sup> Vid. Comment. 3.

And what can be more natural to conceive, than that a Disease, which has evidently proceeded from a Stoppage of the Pores, should, when *Nature* her self has prepared the Humors in order thereunto, be carried off by the same Passages, or setting those Pores open again, especially if the Work can be accomplish'd by Means which do not disturb or over-heat the Blood, and is attempted at such Times, as she her self does indicate?

The third of the Evacuations observ'd, as determining Fevers, among the Patients of *Hippocrates*, was that by *Vomiting*; yet this I think is seldom the Case with us, in Comparison of the foregoing by *Sweat*; for as that which falls out in the Beginning thereof, very rarely concludes the Distemper, so what after ensues of this Kind, through the other Stages, is for the most Part a *Symptom* only.

'Tis true, it may so happen, as after a Debauch or some noxious Drug taken

into the Stomach, Nature sets about her own Deliverance, by instantly returning or throwing out what gave her the uneasiness, whereby the Poison getting no farther, or not being admitted into the Blood, a Fever may be prevented: And this Advantage we have certainly gain'd hereby, that as she from the *Nausea* and Retching, gives the first Hint, so there is scarce any, where we may not with Safety pursue her Steps; and as I have already acquainted you, begin the Cure by giving a Vomit, than which the *Commentator* himself does acknowledge there is no Remedy more wholesome, or so effectual to take off the Head-ach or Sickness, usually accompanying, whereby also not only the first Passages are empty'd, the crude Matter therein abounding restrained from passing farther, but by the force of the shock from the Muscles concern'd in the Operation (*which according to mathematical Calculation* <sup>c</sup> *is equal*

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<sup>c</sup> In the *New Theory of Fevers*.



to 260 thousand Pound weight, neither a Grain over or under) all the Bowels within reach of the same (and surely none will need to be left out) being drawn into Consent, are enabled to free themselves from any obstructing Matter, sticking to their Sides, or stopping up their finer Passages; besides which some Particles of the Medicine, together with the diluting Liquors poured down after, insinuating into the remoter Vessels, and mixing with the Blood, the Humours heaped up therein, are fitted to be thrown out by *Sweat*, usually succeeding the work of Vomiting <sup>d</sup>.

As to the fourth way by *Abscess*, the whole Process being Nature's handwork, where by some critical Translation of the morbid Matter upon certain parts of the Body, such *Abscess* is formed, and which, according to the same, where it is discharged, proves either *salutary* or *fatal*;

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<sup>d</sup> See Comment. iv. of Dr. *Freind* de Feb.

this, I say, is so much her doing, as not to be imitated by Art, who can only assist in hastening *Maturation*, when any Tumour appears that gives Encouragement thereto, which then belongs properly to the Surgeon's Province.

The fifth is by *Spitt*, meaning particularly the Expectoration, so necessary in the Diseases of the Breast, such as the *Peripneumony*, and *vomica Pulmonum*: The *pleuritic Affection*, as we have already noted, is little advantaged by such Remedies, as forward this Discharge, but in a manner wholly depends upon the Lancet; however, as helps to attenuate the Heat, and abate the Inflammation, *nitrous Medicines* with *Emulsions* may be beneficially prescrib'd: As to take off the Tension of the inflamed Membranes, *Sperma Ceti Boles* and *oily Draughts*; but of this before, and for your farther Instruction therein, I would desire you to refer to the v Comment. of this Author.

Proceed

Proceed we now to the sixth, at least in our Account, which was that by *Stool*, in which there is a large Field to contend, and powerful Combatants to engage.

We have already acquainted you, that in the common *inflammatory Fever*, the Body is to be kept open through the whole Course, if not answering of it self, by the means of lenient Clysters or lenitive Draughts, every, or, at farthest, each other Day, whereby to allay the feverish Ebullition of the Blood, and secure the Brain from being affected; but in *nervous* and *eruptive Fevers*, where the Pulse is depressed, and the Spirits languid, both these must be forborn, or less frequently enterprised, lest the *Rash*, or whatever is thrown out into the Skin, falling back, or the Patient weaken'd thereby, Nature should be too much enfeebled to cast off her Burthen, by some more suitable way of her own choosing, or which is more agreeable to the Genius of the Fever.

We have also farther inform'd you, that in all of them, about the time of  
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the termination thereof or presently after, so soon as his Strength will allow, he is to be purged, by which any remaining Humour, too gross possibly for being carry'd off by the *Perpiration* through the Pores of the Skin, may be sent out from the *Glandules* of the *Intestines*.

But now it seems in that particular one of the *Small Pox*, we have some Physicians of great Learning, sound Judgment, and equal Probity, who have lately advanc'd a Position entirely repugnant to the Opinion of their Predecessors, *viz.* that before the time of *Maturation* is compleated, if any Danger seems to threaten, we are to begin this Method of *Purging* the Sick, and must now lay all the Stress upon these Medicines repeated daily, or each other Day, as the Circumstances allow, or the Case may require.

I must own I have yet some Doubts upon my Mind, concerning this new way, having so often been a Witness of the fatal *Diarrhæa's* that, about this time,

have carryed off so many of my Patients, in spite of all my Endeavours to bridle the same : Infomuch that, unless in the *confluent* sort in Infants and young Children, when, as *Sydenham* has observ'd, these Stools are a kind of Substitute to the *Ptyalism* of the Adult, happening at the beginning of the Distemper, I am always fearful of the same, since in the milder Species thereof, when all Things go as well as we can wish, nothing is so common as a constipated Belly : Nor did we think, till lately, that any of the Afflicted suffer'd for want of Stools, tho' it were for 10, 11, or 12 Days successively, or till the Suppuration of the Pustle and the Scab beginning to dry away ; but then on the other hand, if before, or even at this time they fell into a Flux or Looseness, we were apprehensive Things would not go well, as Experience too often had confirm'd to us ; and therefore for some Years past, when at any time about the state of the Disease, or the return of the Fever, which is called a *second*

*cond one*, I found the same high, great Thirst attending, Oppression on the Breast, *Delirium*, &c. And a Pustule rather fill'd with a crude wheyish Liquor, than *Pus*: When at these Times, I say, I have adventur'd to direct a domestick Clyster of Milk and Sugar, to soften the hard Excrement in the *Rectum*, in order to relieve the Head, it has sometimes answer'd: At others (so fickle and uncertain is the State or Condition of Physick, together with that of its Professors) in the Place of one, we have had it may be ten or a dozen Stools thereby; so that with much Difficulty the same has been restrain'd, and the Patient saved. What now must have been the Issue, had a physical Clyster (if no other than the common emollient Decoction, of which the Relations were not apprized) been thrown up, but this, that I had surely taken wrong Measures, or the Apothecary had made some Mistake, by which the Sick was thus in Danger of being destroy'd? And truly I have been less adventurous



venturous this Way, perhaps, than many others, encourag'd by whatever Authorities, having often been a Witness of such wonderful Alterations after one Night's time, in the advance of the Pustule, its filling, and sudden change from crude to a concocted Matter, with a return also of the Spitting or Expectoration, which had ceas'd the Day before; and when, if I had adventur'd upon a simple *Clyster*, instead of *Blistering*, which I now prefer, or that more Stools than I expected should have follow'd; I had in all likelyhood put Nature out of her way, and hinder'd the Business of farther ripening this immature Production, which she was bringing about.

But these Gentlemen tell us, they do not set upon their Purging, till she has done all she can upon the Outworks of the Skin; or that the Pustule now growing black and crusty, instead of filling more, is incapable of receiving any Humour from the Sinus of the Blood; and that in vain do we expect ripe Fruit from the

wither'd and dry Branches : That therefore the Diseased has no other Chance for an Escape, than by stimulating the intestinal Fibres, to help discerning of those putrid Humours, which the *cutaneous Glands* are now unable to effect.

This, I must own, carries a *Rationale* along with it, and has seemingly much Weight therein ; but when they say we run no hazard by the *purging Method*, of the swelling of the Hands subsiding, after that on the Face begins to *fall*, or the Pustules thereon, before their state of Arifaction ; neither yet that the Salivation will be thereby impeded, they will give me leave to hesitate a little, till I have made a sufficient number of Experiments, to confirm me in this Belief, or till I can reconcile that driving from the Center to the Circumference, and from the Circumference to the Center, are much the same ; or lastly, that I am satisfy'd we may be able to eliminate by these Stools, those very individual morbid Particles, which Nature had intended,  
and

and endeavoured, altho' in vain, to cast out by the Skin.

In other *eruptive Fevers*, I am sure this is a most dangerous Practice; since nothing is more common than for one or two loose Stools, at these Times, to overset the Patient.

And thus, dear Sir, you have the sum of my Thoughts upon this very slippery Subject, who cannot think a few remarkable Recoveries under the *purging Regimen*, brought to countenance the Practice thereof, should avail, while we see abundantly more People dye of the Disease with a Looseness upon them (and which alone destroys them) than can be truly said to escape thereby.

You know what our Friend *Wagstaff* has said of this Disease, that there are some whom the *Physician* cannot cure, and others, that the *Nurse* can't kill; I wish with all my Heart, that by many more dying than doing well under this hasty Purgation, we give not occasion to have the Phrase inverted: I am sure

I would



I would not have you enterprize it, but in Consultation with some, whose Character may be sufficient to secure you from Obloquy, in case of a Miscarriage: Neither then, till you are convinc'd in your own Mind, that there is room for no other way, by which your Patient may escape, and then let his Friends determine among themselves, whether this *Anceps Remedium* is not *melius quam nullum*: Nor would I be thought so great an Opposer of *Purging* (any more than *Bleeding* at these Times, when the Fever is extreme, the Breast straiten'd by the Inflammation, and the Patient under Difficulty of Respiration from the same) as to deny a laxative Medicine, that might just empty the Bowels when over costive: To which purpose, I usually prescribe an Ounce of *Manna* to be dissolved in a quart of pectoral Decoction, a warm Draught of which may be taken at 2 or 3 Hours distance, till the Intention is answer'd, without letting my Patient or his Friends know any thing of the Matter;

ter ; and by going farther than this, or half an ounce of the *Elect. Lenit.* in 2 or 3 ounces of *Aq. Lact.* I must own I am not fully satisfy'd, whether I may not do more harm than good : As to the directing of *diagrediate* Medicines (which our Author insinuates may be safely administer'd) at a time of so great a *Phlogosis* in the Blood, manifest by the dry Tongue and scorching Heat, I can only say, *præscribat qui vult, haud ego* ; and these Fears of some ill Consequence attending such Proceeding, as I have already inform'd you, are founded upon my Observation how small a number of Patients are restor'd, when seized about this time with *Diarrhæas*, *Symptomatical* surely, rather than *Critical* : or if the last, a fatal *Crisis*, in Comparison of those who are destroy'd thereby<sup>e</sup>.

I had it once in my Mind, to have given you a more distinct Account

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<sup>e</sup> See more on the same Subject in Dr. *Freind's* ix Commentary, as also in his Epistle to Dr. *Mead*, *De purgantibus in 2<sup>a</sup> variolarum Febre.*

of this Distemper, under its several Divisions and proper Stages; but considering it might draw me into Controversy, I choose to avoid, and turn my Thoughts upon Fevers in general, which I only intended, and you desired, into a Discourse of one particular; a task for which I own my self unfit, besides enlarging the Bounds I had set my self, I lay'd aside any farther intention thereof; but yet I cannot forbear taking Notice that the Species of this Disease seems of late to be unnecessarily multiply'd: For we are now vastly encreased beyond the old Division of *Distinct* and *Confluent*, into *Chrystallinae*, *Verrucalæ*, *Siliquosæ*, from their several Resemblances. Also *vesiculae flatulentæ*, & *aquosæ*, compared to little Bladders, fill'd either with Wind or Water; or as Dr. *Freind* has denominated others of them, *Papulae sive Pelliculae rotundæ*, *Concavæ*, *Vacuae*, *Molles*, *Vesicarum aut Folliculorum Similes* <sup>f</sup>.

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<sup>f</sup> Of which in his Epistle to the same Gentleman, *De quibusdam Variolarum generibus*.



The learned *Frenchman Helvetius*, in his *Essay* lately publish'd on the *animal Oeconomy*, reckons up also four Sorts of a *malign Small Pox* ; one belonging to the *Distinct*, the other three to the *Confluent* ; and differenceth them accordingly, as *malign Distinct*, and *malign Confluent* ; between these comes the middle Species or *Cohesent*, which doubtless may border also on both Kinds, that is *Benign* or *Malign* ; but whether each, as this worthy and judicious Man has decypher'd them, is always attended with the same Specific or peculiar *Characteristicks*, by which indubitably we may discover them from all others, or be apprized of their fatal Tendency, merely from their Aspect, before some threatening Symptom appears, may perhaps be questionable : Or how far these Particularities may be of real Use, I do not say to the *Historian*, but the *practical Physician*, I shall leave others to determine ; whilst with Respect to my own Opinion, I think them for the most part little otherwise different,

than according to their greater or lesser Tendency, from a state of *Crudity*, to a more or less perfect one of *Digestion* or *Concoction*; or as they happen to prove of a more *benign* or *malign* Quality or Disposition, requiring suitable *Regimen*, *i. e.* such as shall be thought most proper for aiding or assisting Nature, in disposing them to that Maturity they should, or ought to acquire.

And thus, if she by any *Lusus* or *Aberration* throws out some *anomalous* Eruption, bordering however upon this Disease; or from which we in some wise fathom her Design, what is it that the Physician can do more than help her (at least all he can) in bringing these irregular Productions to that Perfection, of which they are in their own Nature capable; to encounter the Symptoms, and support her under the *Conflict*, till she has got the Mastery, or is vanquish'd by the Enemy? What is it, I say, that the variety or different Resemblances of these Pustules, which can scarce constitute a  
new

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new Species, any more than a Monster with a human Face, a new Set of Men ; or admitting them more frequent than they are, What is it, give me leave once more to enquire, that Art can do more than sedulously to attend the Symptoms, with the various Appearances, and providing against the same, to bend the chief Scope to the vital Indication; making the Pulse the general *Criterion* for the *physical Regimen*, whether *cold, temperate, or hot* ?

Whoever, I am persuaded, should follow that of our last mention'd Author, I mean *Helvetius*, through the several *stadia* of this Distemper, his Bleeding repeated two or three times a Day, both in the Arm and Foot, at first setting out; his Vomiting with the *Sal Stibii*, and purging three or four Hours after, with his daily clystering at some times, through the whole Course thereof; or lastly his *Beef Soups* instead of *Chicken Broth*, which was deny'd by Dr. *Sydenham*, *quantumlibet tenue*, at the Close, would be



hardly, I mean severely censur'd among us, who seldom or never run these lengths, for fear of interposing in Nature's Work at the beginning, hindering her in her *Apparatus*, or at that of Separation, much less at the Close, where she is about the perfecting, or bringing to Maturity what she has cast forth; but since you have an Opportunity at all times to scan this Method, and consult the several Cases, in which the same is set down for our Imitation in the Treatise aforesaid, I shall leave it with this Remark, that as the best Head-Pieces for *Theory* or *Speculation*, have not been always Masters of the best and safest Practice, so I would not have you forsake our Countryman *Sydenham* yet a while, as a Guide in the *Small Pox*, till you are satisfy'd from your own Observation and Experience, that some later Discoveries, and new Methods, will be more to the Advantage of the poor Patient, who trusts you with his Life; and for which, if negligently or inadvertently lost, you are not certain you shall

shall not be accountable. It is said by some who knew him, that Dr. *Sydenham* abated of his Rigour in the *cold Regimen* before he dy'd: And it will be surely safest for you to prefer the mean, as I have hinted to you at the begining of this, or the more temperate: It was excusable in this honest Practitioner, who seeing the People round about him, at a time when the Disease was *Epidemical*, and very raging, scorch'd to death with *Mithridate*, *Venice Treacle*, or *Treacle Water*, with the *Syrup of Saffron*, and then swelter'd up with double Quilts, Rugs and Blankets, with close Curtains, and a great Fire in the Chamber, by which the *Maculae Nigræ* and *Petechiæ*, the *bloody Urine*, and other dreadful Symptoms, such as *Delirium*, *Coma*, *Subsultus*, &c. were hasten'd; that he, I say, observing the mischief of these *Alexipharmics*, and hot Method in general, was running upon the Reverse, not out of the *Frying Pan* into the *Fire*, but from this last, as it were into the *Water*.

And here, before I quit this Subject, give me leave to correct another Mistake surely, of this admirable Man, who says, that he had neither seen, nor heard of any one's miscarrying in this Disease, because the Small Pox came not out at first; but that too many (which we all know) dy'd in whom the Disease appear'd well, but after struck in again, the Pustles at least sinking or falling, before they were ripe: In answer to which I could give some Instances, where I had sufficient Assurance, not only by preceding Symptoms, but the actual Appearance of a few scatter'd, but faint or pale Eruptions, that the Disease was *variolous*; and if Nature had been strong enough to have thrown out the same, there would have been a true Small Pox: The Pulse I observ'd was low and flagging, the parts of the Body cold, for want of a Fever, rather than the too great Effer-

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§ Sect. 3. Chap. ii.



vescence of the Blood; the Sick complaining of Faintness, and the Pustules (of which in one, I observ'd more than an Hundred, in different parts of the Body, in the other scarce Twenty) about the sixth Day, suddenly disappearing, they dyed under a *Deliquium* with light Convulsions.

These certainly, if any among the Distinct, may be truly named *Malignant*, or of evil Disposition; and wherein a *warm Regimen*, with plentiful *Blistering*, but no other Evacuation, is not only justifiable, but absolutely necessary, as the more temperate, in the other Species.

I come now to the seventh, and last way of Evacuation, taken Notice of by *Hippocrates*, as a critical Solution of Fevers, *viz.* that by *Urine*, seldom, at least more rarely, happening with us: However by its several Contents and Appearances, furnishing us with Signs, as well *Diagnostic*, in regard to some Diseases of the urinary Parts (of which more presently) as *Prognostic*, in some parti-

particular Fevers ; wherein, however little Stress can be lay'd on those Remedies we call *Diuretick*: So that shortning my Remarks upon the same, I will sum them up with this of our judicious Commentator, thereunto relating<sup>h</sup>.

*Neque tamen ideo quod Urinam moveant, Potiones hæ (viz. diuretici) inter Evacuantia protinus reponendæ sunt: quippe non tam vi aliqua diuretica hoc faciunt, quam quia dilutissimæ sint, uberri-meque ingestæ: ita quamvis effusissimè proruperit Urina, fieri potest, ut nullo modo exhauriantur vasa, in quibus eadem humorum mensura, Cursu perenni circumfluit: Igitur contenti simus bono eo quo præstant hæ potiones, quod diluent, si licet, evacuandi Virtutem, quam negavit Natura, iis ne quæramus affingere.*

I have now gone through the several critical Discharges, by which Nature has been at some times observed to throw

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<sup>h</sup> Comment. the VIII. de Feb.

off the febrile Matter, as taken Notice of in antient Times by *Hippocrates* himself; besides which, tho' not in the way of Imitation, having no Precedent from her Proceedings, Art has found out one of a more extensive Quality, and now (whether justly or not) practis'd in Fevers of all Kinds: I mean the *Blister*, of which the same Commentator has hinted to us, that altho' many of them give way to Evacuation only without other Remedies, yet scarce any, where the Disease rages with Vehemence, unless by the help thereof, notwithstanding as a *topical* one unheeded by that great Master of *physical* Observation *Hippocrates*: However mention'd on some Occasions in his Writings, as an *internal* Medicine.

In respect to their Use externally, or by the way of Blistering in Fevers, so far as is reconcileable to their *stimulating* Property, or in Cases where such *Stimuli* are requir'd, we have the Suffrage of almost all Parties; and seem here indeed to



to have the Voice of Nature; for what so fit to raise the drooping Spirits, and by lending as it were a Spur to the Solids, enable them to drive on the sluggish Fluid, almost ready to stagnate in their Vessels, or giving new Life to the benumb'd Parts, that they may continue the Circulation of the same? What indeed can rouse the *Lethargick*, the *Apoplectic*, the *Epileptic*, or recover Sense and Motion, lost in a manner to the Paralytic, like unto these apply'd to the several Parts? What in the *nervous* Fevers, or *Eruptives*, with stupidity of the Brain, Oppression at the Heart, a labouring or languid Pulse, *Deliquium* or Fainting, Chilliness of the Limbs, or of the whole Body, instead of burning Heat? who, I say, at these Times can be so obstinately stupid themselves, as to withhold this noble, this principal Relief?

In a word, as *Laxity* of the *Solids*, and *Lentour* in the *Fluids*, a natural consequence thereof, are the general Motive to the Use of *Stimuli*: So where either of these

these are present, we should not question their Utility; especially in cold Habits, such as the *Leucophlegmatic* or *Pituitous*.

And hitherto we have taken Notice of them, on Account only of their *stimulating* Qualities, by which, as *Baglivi* in his Practice has observed, the lax Fibre is braced up; and thereby more capable to push on the sluggish Juices, as but now remark'd; which is founded upon the general Principle of the *Strictum & Laxum* of the *animal Fibre*, either *muscular*, *membranous* or *nervous*; without any regard to the Discharge that is made thereby, which has also its Advantages; as in many *rheumatick* Defluxions, such as those particularly about the Throat and Jaws, when blistering between the Shoulders, or behind the Ears, deriving the Serosities by these Parts, gives manifest Ease to the Patient: The same in *humoural* as well as *nervous Asthma's*; also in *Catarrhs* arising from the like serous dripping out of the Glandules of the *Larynx*, exciting those irritating and troublesome

blesome Coughs, which being thus diverted by blistering the Neck, is taken off; also in fixed and stubborn Pains, how often, as it were by Charm, do we perceive the acrid Humours, vellicating the Membranes, thus eliminated or drawn forth?

These, I say, are some of the Advantages we receive from *Blisters*, both in the way merely of a *Stimulus*, and the Discharge of that *serous Illuvies*, gathered under the *Cuticula* where they have been apply'd: As for their Use in the *Scall* or *Scab*, the *Impetigo*, *Papulae*, *Lepra*, *Lichen*, their removing *Stigmata* or *Scars*, for which they have been apply'd in former, as well as later Days: I can say little from my own Experience to countenance their Application, which, I must own, I have been rather shy of, from the Mischief I have known ensue at some times, and in some of the same Cases here lay'd down, where Empiricks and old Women have been at work with them.

But



But these, Sir, are an inconsiderable Part of the Excellencies of the *Epispastick*, or the *Cantharides* thus outwardly applied, some Parts of which being got into the Blood, as the Doctor notes in his ninth Commentary: And which it is certain they can do, by the Disturbance given so frequently to the Bladder; they are able to impress great Alterations in its Mass, to promote the glandular Secretions, incide the Lentour of the Blood, and divide its Cohesion; by which, Way is made for the Passage thereof, where before they were heaped up, and gave rise to many stubborn Obstructions, scarce otherwise to be removed.

In these Cases, then, and at such Times, 'tis evident that the Good we receive from *Blisters*, can by no Means be derived to us, from the Discharge of *Serum*, since this might be effected otherways; as particularly by *Diuretics*, where the same in Substance with that is let out by the *Blister*; neither will like Benefit arise from any other vesicating Medicine,

what Quantity soever of the *Serum* is drawn away thereby, besides this of the *Cantharis*.

These, with other Arguments, brought, however, by this learned Physician, for this Practice in almost every Fever, have not yet been able to convince me, but that in some of them, and in some Habits of Body, they have their Inconveniencies, as well as Advantages in others; for if by *Stimuli* and Pain, which in some Cases is their prime Intention, they rouse the torpid Spirits, regain an Elasticity to the relax'd Fibres, and enable them to quicken the Motion of the Blood, as in the *Comatose* Diseases, and others, we have already observed; what must we think of them in the contrary State of both, where the Tension is already too great in the one, and through the attending *Orgasm* or inflammatory Disposition of the Blood, the same is too rapidly and tumultuously driven upon the Vessels of the Brain, in the other; encreasing all the

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Symptoms, as *Delirium*, *Phrensy*, *Vigil*, and *Inquietude*, at least preventing that *Repose* and *Slumber*, so necessary to calm the *Outrage* of the *Spirits*, and appease their *Disorder*? What must we think of them in *meagre Habits*, in *Hætic* and *bilious Temperaments*, with *great heat* and *thirst*, *quick and high Pulse*, *dry Skin*, *perpetual tossing about of the restless Patient*? Surely, at these Times, it will behove us to be more cautious of dilaniating or farther excruciating the miserable Patient, unless we could satisfy our selves from *Observation*, and *Experience* (not *simple Theory*) that the Good we receive from any Parts of the *Cantharides*, insinuating themselves into the *Blood* and *glandulous Liquors*, and there, as our Commentator would persuade us, making such *Impression*, or so altering the *febrile Matter*, that it may be with more ease carry'd off by *Perspiration* or otherwise, and the *Head*, together with the whole *nervous System* hereby secured

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from the same, instead of being farther injur'd, unless, I say, we could be certain these, or any other Advantages would accrue, and recompense the Injury the Patient must sustain in the mean Time, by Reason of the Pain and *Stimuli* : For tho' this strenuous Propugnator for their Use at all Times, tells us, they have this above the other Evacuations, that they are safely enterprised at any Time of the Fever, which cannot be as to *Bleeding*, *Sweating* or *Purging*, without the utmost Danger, at some times of destroying the Patient; yet surely a very painful Irritation excited, when nothing is so much wanted as Rest and Quiet, cannot be deem'd a harmless or inoffensive Experiment, by which the *Dysury* on one Hand, with the Smart of the Parts they are apply'd to, on the other, are perpetually interrupting both.

I must own there are some Constitutions suffer *Blistering* with very little Disturbance, in Comparison of others, altho' entirely free from any *Stupor*,  
which

which for the generality are the *Lax* and *Phlegmatic*; and if others can bear them well, I should not so much object against their Use, where we can propose a real Service from them; but neither can I come into the indiscriminate Practice, so commonly obtaining now among us, from whence, as I have seen, I must acknowledge, great Benefit arising to some; so also, I think, as great Mischief to others; and notwithstanding I can allow, that no other *vesicating* or *septica* Medicine, can induce the like Alteration in the Blood, from any Particles thereof, mixing with the Humors, yet must I differ herein with our Author, being satisfy'd that by their *Stimuli* or irritating Qualities, communicated through the *nervous System*, by Continuity from the Parts on which they are apply'd, they will in like Manner encrease the Tension and quicken the Motion of the Blood, as is evident by the Pulse, which lasts till the burnt Place is digested, the Slough

separates, or the Pain goes off: Nor is it known where much of this has been occasion'd, either by the scalding with hot Water, or burning by actual Fire, that a *Symptomatic Fever* did not ensue; but I shall take leave of this Subject, when I have inform'd you that in the generality of the *nervous* and *eruptive Fevers* belonging to that Class, altho' unattended with *Sopor*, or any *comatous* Affection, if the Patient seems hurry'd or confus'd, complaining rather of a *gravative* than *acute* or *tensive* Pain in his Head, there is scarce a more serviceable Remedy than an *Epispastic* apply'd to the *Occiput*, and continued there for some Days, which in Regard of the blunt Sense of the Scalp, is also less painful than upon the muscular Parts, whether Neck or Arms, and by its constant drip relieves the Brain, when in order to remove the *Dysury*, very often troublesome, by Reason of the *Stimulus* here longer continued; whence some Particles of the Medicine have



more Opportunity of being convey'd into the Blood, and exciting that troublesome Sensation upon the *Sphincter*, you may dissolve an Ounce of *Gum Arabick* in a Pint of the *Decoct. Hordei*, and adding two or three Spoonfuls of the *Syr. de Althæa*, give a Draught, first warm'd, frequently, which I prefer to the common *Emulsions*: But this Complaint you may obviate by ordering a small Quantity of *Camphor* to be powder'd with a Drop or two of the *Ol. Amygd.* as about a Scruple or half a Dram, and sprinkled over each of your *Epispastic* Plaisters, when you shall seldom hear of a *Stranguria* or *Dysuria* upon these Occasions.

Having finish'd those Particulars you desire, it remains for me to deliver some Directions, as to your own Behaviour towards the Sick you are call'd upon to visit; and who, as he can best judge of what he feels, you must take the Account therefore from him, not suffering the over-officious Nurse, or any other

at the Bed side (as is too customary) to take the Words, as it were, out of his Mouth, or deliver, rather, some out of the Way from their own: Thus dictating for him, as if they understood the State of his Case, or what he undergoes, better than himself; nay, altho' a light Delirium happens to accompany the Fever, I practise this Method, by which I am enabled to make a Judgment how far this Alienation of Mind extends, whether a simple Forgetfulness from a preceding Slumber, being just then awak'd, and in a Kind of Consternation, as may happen at some times, or truly *Light-headed*, as they call it, from a total Subversion of the Understanding.

When you have thus made such Enquiries from your Patient, as may give you the best Insight you can get into the Nature of his Complaint, you may then, but not before (unless the Sick can give you none himself) get farther Information from the By-standers or Attendants; and after this, sitting down by his Bed-side,  
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take hold of his Wrist, to examine his Pulse and the Temper of his Skin, a Matter of greater Moment than is thought by some, whether hot and dry, or parching, moist with an agreeable Warmth, or Damp with a Sort of Chill; then looking on his Tongue, at the same Time taking an exact Survey of all Parts of the Face, more particularly his Eye, that the next Day you may be better able to judge of the Alteration; from a Series of which, long continued, you will be able to presage more than at first you can imagine; for truly in many of these I have found somewhat of the incommunicable, or which nothing but my own Eye and my own Finger, could have convey'd the same Ideas to my Mind, as these have done; and it must be surely hence, I mean the Countenance, the Temper of the *Skin*, the Way of Breathing, the Mode or Posture of Decumbiture, with the Gesture, some or all, that certain sedulous and constant Attendants upon the



Sick, who have made it their Business to observe, have hereby got the Start of many Physicians, less heedful this Way, in regard to the *Prognostic*. Thus as to the *Position*, they tell us, they very rarely find a Person dying upon his Side, and when he is no longer able to continue that, but turns altogether upon his Back, sinking down still lower in his Bed, they entertain but little Hopes of his Escape; which indeed carries much Reason along with it, as arguing great Prostration of the Spirits, or Inability longer to hold that Posture, so natural in Time of Health, but overpois'd, as it were, by the Weight of the Trunk, especially the Spine, is sway'd down involuntarily into the supine one. The Gesture of the Hands and Fingers in the fumbling with the Sheets, is, you know, an old Remark, and sure Token of impending Mortality: But it is Time now you retire from the Bed-side, and call for the Urine, gathering hence what you can also, then for the Pen and Ink, if not provided

provided (as it ought to be) already, by no means hudling over your *Formula*, too common a Practice, but maturely weighing all Circumstances that may make either for or against the intended Remedy you are proposing in your Mind.

Consider, my good Friend, 'tis Life that lies at Stake, a Life, perhaps, on which a distressed Family, or a numerous and helpless Offspring has their Dependance, and which an inadvertent Slip of your Pen may bring to ruin; but if otherwise, or that only a single Person should be lost, by Want of that deliberating so necessary at these Times, I cannot think that one of your Principle would know how even to forgive himself here, were he sure to be forgiven hereafter; and therefore as less necessary to the Person I am now writing, I shall have done with this Admonition.

Whilst in your Patient's Chamber, I would advise you to carry an even Countenance, lest by the Sternness thereof,  
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upon the Feeling of his Pulse, a Turn or Shake of the Head, at the sight of the Urinal, much more a discouraging Word let fall in his hearing, or a Whisper to his Friends, he conceives his Case to be absolutely desperate, or through his Fears make it truly such; but upon retiring and taking your Leave for that Time, it will be expected you should deliver your Sentiments of his Case to them, whether the same be dangerous or not, as to the Event; and where there is nothing immediately threatening, you are to give both him and them the Encouragement it will allow, especially the former, that he may support himself thereunder, by thinking better thereof; taking especial Care notwithstanding, that at no Time you make any absolute *Prognostic*, either of *Death* or *Recovery*, nor leave him, unless by unhandsome Usage obliged, under the greatest seeming Danger, as if there was no Possibility of a Recovery, which in Fevers is very difficult to warrant, where  
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at some Times, by unforeseen Incidents, when *Art* has been baffled, *Nature* takes the Work into her own hands, and finds a Way for a Sort of *Resurrection*, before that at the great Day of *Audit*.

'Tis my Custom to desire the Apothecary, that he would inform me by some Means or other, under these very doubtful and desperate Circumstances, the Day following my last Visit, whether my Patient is yet alive; or if passing by, I see not the Signal of an open Window, I alight and step up Stairs, persuading his Friends, whilst they can get any thing down, they should attempt it, if it were but a small Spoonful, whereby languishing Nature may be a little recruited, or, if possible, reviv'd: By this Method, and refusing a Fee, I am thankfully receiv'd, and could give you many Instances, where the same has turn'd to account; for if it should happen (and who can say, unless *Omnipotence*, he has the Issues of Life and Death at his Disposal?)  
that

that after a long Dispute, she gets the Mastery, I have secur'd my end, viz. the keeping out some officious Person, with their *grand Restoratives*, their *Gutta Vitæ*, and what not; (for now is the time they will venture any Thing, being given up by the Doctor) and farther advanc'd my own Repute among them.

However, at this Season, I take care that no Remedy be prescribed unless some Cordial Mixture, with perhaps *ʒiij. of aq. Lact. ʒj. of aq. Theriacalis ʒss. of Syr. Croci and ʒj. of Conf. Raleighana*, to be given as I said before, by Spoonfuls, for I think it to little Purpose to send in more Ammunition when the Fort of Life is upon surrendring; besides to order Medicines at a time when they can't be taken, is base and ungenerous, as to see a Table crouded with *Boles* and *Fuleps*, when a poor Wretch is at the point of departing, is the most unseemly Sight that can be; but to encourage the Prosecution of this Hint I have now given you, and to forwarn you of making absolute *Prognosticks*:

*ticks*: I could give you twenty Examples of Persons, deem'd past all Hopes, by the most eminent of the Faculty of Physick, surprizingly recover'd, some of which have set up a Quack or a practising old Woman who had got down a few Drops of some insignificant Liquor, or applied a Plaster, a *Beef Stake*, *Veal Cutlets*, a *Sheep's Milt*, or a *split Pigeon*, to the Soles of the Feet, and made them famous all their Life time after; but one, which, whilst I was writing this, has happen'd, I will here impart.

A young Lady who had suffer'd many Days under what I call a *nervous Fever*, about the Month's end from the first Seizure, having all the Symptoms of a dying Person upon her, as an *imperceptible Pulse*, *cold Sweats*, *Tremor*, *Aphonia* with *strong Convulsions*, a worthy Man of the College, who had been call'd in upon me, thought it time to take his leave, modestly alledging, that the seeing of two Physicians was too much, when neither could do any good, the Patient incapable



ble of receiving any Thing we could direct.

A Day or two after his withdrawing, the Apothecary desir'd I would come once more to take a view of the Body, for having done all under her insensibly, through the oversight of her Nurses, she was mortify'd in near twenty Places of her Buttocks, Hips and Thighs, which how unlike so ever to succeed, having scarify'd some of the deepest, I order'd to be well fomented with a Decoction of the hot Plants, and a large Proportion of camphorated Spirits, and that the same should be after drest with Pledgits dipt in the melted Liniment, *cum tertia parte Spir. Terebinth.* over which an adhæsive Plaister that might secure them; giving Charge to the Nurses to be more careful for the future in turning her dry, and shifting the Applications which the Apothecary provided, and left ready for them, as they grew wet and fell off.

Thus for 2 or 3 Days we continued this Method, the Patient taking nothing  
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in all that time, at least of no Signification, but lay under continual *Leipothumies*, as one dying away, for no sooner one Fit went off, but another instantly came on: Yet notwithstanding by thus diligently inspecting the Mortifications daily, and sometimes twice, the native Heat, which seem'd in a Manner extinguish'd, by the long continuance of the Fever and impoverish'd State of her Blood, by which its Balsam was destroy'd, began to rouse up, the Parts to inflame and separate at the Edges, shewing some little tendency towards Digestion, which encourag'd us still to proceed, till I perceived a laudable Matter upon several of them: Yet coming about the two or three and thirtieth Day of the Sickness into the Dining Room, I found the Relations in Tears, who told me it was needless to go up, for that she was now dead, as they apprehended, who were about laying her out.

I was somewhat astonish'd, I must confess, that the Hopes I had so lately entertain'd,

ertain'd (which yet I had kept to my self) of this Escape, should be gone thus suddenly; but having seen her several Times before under the *Deliquia*, I was not certain it might be now otherwise, and even against their Wills ran up into the Chamber, where by a gentle Warmth, but much more the creeping Pulsation of the Artery, tho' no breathing was perceptible, or motion of the Breast, I was certain, tho' we had many Parts cadaverous, the whole was not yet become a *Cadaver*. I held a strong smelling Bottle to the Nostrils, and after some Minutes, the Water trickled from her Eyes; in a little time the Fit went off, and she lifted up her Eyelid: I call'd to her aloud, but she seem'd not to understand any Thing I said; yet I made a shift, by opening her Mouth, to get down three Spoonfulls, one after the other, before I left the Room, of a Mixture with  $\text{℞j. of the Sal. Vol. c. c.}$  added to that with the *Raleigh's Confection* before mention'd, from which she grew at Night more sensible; her



her fainting return'd much seldomer, and was of shorter Continuance; insomuch that after few Days her Heat and Spirits reviv'd, the Sloughs cast off, and the dead Lady, by a suitable Diet, is restor'd again, to the Surprise of every one that had seen her : Whom, should we have both relinquish'd, and she had got through, under the Management (tho' this was very unlikely, considering her Condition) of another Set of People, I will leave you to make the Inference.

On the other Side, take the following.

*Alcalinus*, as I have already, I think; observ'd, was so remarkable for his Sagacity and Penetration, as to the *medical Presage*, that his Sentence of Death was by some esteem'd so irretrievable, that no Man could avoid the same, when pronounc'd by such an Oracle : And yet I can assure you, the first time I happen'd into the Company of this *Æsculapian Prognosticator*, it was in the Presence of three learned Physicians, who had for several Weeks attended one of my Neighbours,

much exhausted by the continuance of a *slow Fever*, that had several Times intermitted, and been as often put by, for some Days, with the *Cortex*; so that at length it seemed to disappear: But the poor Gentleman growing still weaker, and a *nervous Atrophy* coming on, this famous Man was call'd in, who, after his usual Way, taking little Notice of the other Gentlemen, only enquiring what had been done, advis'd the Patient to turn them off, for that he had no Occasion for their Assistance: Instead of which, the Cook was directed to get ready a Chicken for his Dinner, with a pint of such Wine as was most grateful to his Stomach: (for you must know he had been a Bottle'r) Two Hours after, he was to get into his Coach and to be drove a Mile or two from the Town's end, encreasing daily his Journeys, as he found he could hold out: And thus the Doctor took his leave (having put three Guineas into his own Pocket) with the Salutation of *Do this and live*.

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The first part of the Experiment being try'd, the Chicken would not go down, the Wine indeed passed, but after a little Pause, was cast up again, as almost every Thing he took; when at the time appointed, the second was also put in Execution, and he was lifted into the Coach by his Assistants, one of which sat by him; but by that time he was got to the end of the Stone Pavement, finding himself unable for the Task, he order'd his Return, where being with much Difficulty taken out, he expir'd before he could be put into his Bed.

This Case *Alkalinus* surely mistook, believing all merely, the Effect of *Inanition, Flatulency* or *Hypochondriacism*; like what *Sydenham* had formerly observed, when being sent for to a Gentleman subject to great Fits of Weeping, and enquiring what had past, he understood there had been a Fever, which his Physician thought was not yet removed, and therefore kept him to a poor Diet, where-



by he was brought under this exceeding Weakness, that without any Cause, he would fall a crying; of which the judicious and rightly reasoning Man, taking Notice, and farther examining the Circumstances of his former way of Living, so different from what he was now enjoyn'd, immediately relax'd his Penance, allow'd him white Meats, and a Glass of Wine, assuring him he had no Fever, nor any thing to fear thence, which was accordingly verify'd, and this involuntary Weeping quickly left him: Whether or no *Alkalinus*, I say, took this for the like Affection, I know not, but am sure, however positive of Success from his Advice, he was out in his Prediction.

I have mention'd these, as Instances, to forwarn you against absolute *Prognosticks*, as also to render you very careful how you give too much Encouragement; for it is always best that your Patient and his Friends should be rather surpriz'd at his doing well, than his Decease; especially if taking hold of any thing you had  
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had let fall, as to his Safety, it should otherwise fall out ; but it is time I should return.

When you have thus done your own Duty, it will be necessary, by the strictest Injunctions, to press that of the Attendants about the Sick : I mean that they are forbid any such Liberty, as may be hazardous by either trespassing in Diet to gratify some irregular Appetite; or getting him up, before it may be safe for him, under the Pretext of the Bed's *soaking him*, a term among foolish and inconsiderate Nurses, or of making it easier for his after Repose : And here I may acquaint you, that I never suffer my Patient to rise, before the Despumation is finish'd, the *Crisis* over, and the Fever at least moderated, if not entirely subdued ; nor that he exceed his Chicken Water, Sack Whey, Panada, &c. Where these are not contra-indicated, as by a *Diarrhœa* (with one Glass of Wine in a Day under Limitations before observed, in the nervous Fevers attended with *De-*

*liquium* and Sweats) through the whole Course.

For believe me, Sir, as I am ready to think one third of the common People are lost, by staying up too long: So others run as great hazard of their Lives, either by rising too soon, thinking to run away from the Fever, or keeping the same on, if not relapsing thereinto, from obstinately humouring their Palates with improper Foods or Liquors: And this by the Connivance or vile Practices of their Nurses, who instead of refusing what they hone after, too often lead them into these fatal Miscarriages.

In visiting these poor People, let me persuade you rather to take no Fees, than undervalue your Profession, by stooping to crown Pieces, as some I have known, making a second Visit also for the same: This will be to lessen the Dignity thereof, and render you a Hackney Visitant, by which, tho' the Miser may regard you, yet the better Sort will overlook you, measuring your Judgment by the mean-



meanness of your Condescension, or accounting the same as small, as the Recompense that will content you: Neither ought you now to prescribe any chargeable Drug, or pursue the *Pomp* of Medicine; for that would be Injustice to the Apothecary, who instead of being paid for *Bezoar*, is perhaps never like to be satisfy'd for his *Crabs Claws*, with *Contrayerva* and the other *Absorbents*.

It is, you know, in the Physician's Power to do great Service to the Poor, (a glorious Office I must own it) at little Expence, and doubtless it is our Duty to consult his Ability with his Sickness. Wherefore in the simple or putrid *Synochus*, I prescribe the *Pulv. echel. C. C. Sed sine Bez.* for the *Συνοχὴς, ubi res sunt angustæ Domi*, the *Lapis contray. & Conf. Lujula*, with some simple Diluent, as the Sage Tea, to wash down the same.

I come now to your particular Conduct among those who are your Patients, or make use of you when they are Sick, where I would never have you over fa-

miliar, at least not so as to be often at their Tables; for this in time will also make you cheap; and there are those who instead of seeing you handsomely, will be apt to place your Visits to the Account of their Civilities, and treat you rather as their *Friend* than *Physician*. Be affable with them and sociable as you will, but cautious how you dip your Finger in their Dish, or take a Bottle at their Cost.

And as for your general Conversation, take this Hint, that you never openly espouse the Interest of a *set Party* in their *Maxims of Government*: Or shew a forwardness to be distinguish'd that way. *Fear God, and Honour the King*; take care of your self, as well as the Sick, with whom you are entrusted; but meddle not in *Party Quarrels* or Disputes.

I have liv'd to see both Sorts take their Turns, and tho' their Pretences have run high for the *publick Good*, yet too many of either Side have fall'n short, and made all to center, when they have  
got

got footing, in their own, and their Favourites *private Advantage*: So that I now distinguish my fellow Citizens, only as *honest*, or *designing* Men; regarding the former, as I am sure you will do, and avoiding the last, however in such wise, as may give the least Offence.

Above all Things, dear Sir, you ought not to be afraid, nor yet ashamed of your *religious Principles*, however you keep those of *Politicks* to your self. It can be no Disgrace I am sure, (to how great a height of Impiety soever our present Age is arriv'd) for a Physician, who owns himself at all Times no more than *Nature's Minister*, to acknowledge himself also the Servant of *Nature's Master*: But I fear, as I have before taken Notice, we have *natur'd* it so long, some of us, as to think even this *Nature*, to mean no other than an *absolute Fatality*, where *Laws* are so irreversibly establish'd, as that the Supreme Power, or *Law-giver* himself, has now no Power left, either to abrogate or suspend them, but that all is hurry'd



ry'd on by a blind Impulse, *because the Sentence is not immediately put in Execution against the Impious*, like that of the Heathen *Destiny*, ever to continue as Things stand at present, or the Principles being worn out, and dropping to Pieces, the World of Matter is to fall into its primitive *Chaos*, and the *World of Life* to a State of *Annihilation*.

So far as we can judge by the Practice of some, they must set out upon such like Foundation, else how can we imagine they should enter the Chambers of the Sick, with a D--n it, what a Pulse is here? Z---s what a Urine? or with Grimace break some sorry Jest at the Bedside, as I have been Witness of? But such Men's Conversation you must shun as the Plague, for fear of Infection. Nor need you apprehend that any one will think you less qualify'd for your Profession, on Account of your *Morality* or sober Deportment; less learned, for not being *Atheistical* in your Discourse; less judicious, for your Diligence and Circumspection in the Discharge

charge of your Duty to the distressed ;  
Or, in a Word, less accomplish'd, because  
you want only the Qualifications of a  
*Rake* or a *Buffoon* : So far from it that I  
am satisfy'd you will be had in greater  
Esteem, even by those Men themselves,  
who, vicious as they are, cannot be ig-  
norant, that if the rest of the World  
were to run upon their *Biafs*, neither their  
own Lives nor Fortunes could be long  
secur'd to them : And now give me leave  
to conclude with the following Quali-  
fications I judge necessary for him that is  
entering upon this noble Profession, or  
who deserves

*The Character of a good Physician.*

First, I think he ought to be a Person  
of solid *Erudition*, and a *sound Judgment*,  
(if to this a *Genius* for Physick, or a na-  
tural Talent that Way could be pur-  
chas'd, much Pains and Labour might  
be spared) expert in *Anatomy*, and fre-  
quent in the Dissection of *morbid Bo-*  
*dies,*

*dies*, as also well read in the *History of their Diseases*, careful in making his *Observations* thereon, or diligent in remarking such as may be of after use to him.

Secondly, he should be a Person of strict *Probity* and *Fidelity*, Master of the best *Morals*, by no Means babling in private, much less in his publick Conversation, the Weaknesses or Infirmities of either Sex, which have been communicated to him, or about which he has been consulted; upon which Account he must be

Thirdly, a Person of the greatest *Honour* as well as *Gravity* and *Modesty*.

Fourthly, he should be *Courteous* to all, yet know how to keep that becoming Distance with his Patient, as may procure to him the greater Reverence and Respect.

Fifthly, he must neither be *Loquacious* nor a *Tatler*, for which none but an *old Nurse* will value him; neither affect a supercilious Air or *cynical Moroseness*, which will procure to him the

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Character of a *proud* Man, and render him contemptible upon that Account, if on no other.

Sixthly, it will behove him to appear always neat in his *Attire*, avoiding the Extremes of the *Fop* and the *Sloven*, with a cheerful Countenance, especially before the Sick; rather compassionating their Infirmities, than resenting every little Excursion which Pain and Peevishness may extort from some of them; for as *Pity* and *Humanity* are due to all Men under Affliction, so no Man shews these most excellent Endowments with a better Grace than does the Physician.

These chiefly for the sake of his *Patient*, whilst for his *own*, it were much to be wish'd that

Seventhly and Lastly, he have such *competent Estate*, as may support a handsome Figure in Life, till Business answers, or that he comes to be taken Notice of in the World; and this I think still more desirable, that he may not fall under any Temptation to do a mean Action, by  
which,

which Dishonour might redound to the *Dignity* of his Profession, as well as to himself.

Now as your Title, Sir, to the greatest part of these necessary Qualifications for the Office of a Physician, are known to those who are happy in your Acquaintance; so if by any Thing I have here communicated, a farther Step should be made, towards the putting you into the full Possession of what remains yet wanting, I shall think the time I have spent therein very well employ'd, and the Recompence sufficient, that in the Number of your *Friends* you place,

*Dear Doctor,*

*Your very Humble Servant.*

Ex Musæo Die ultimo  
Ejusdem Mensis,  
*viz.* Martij 1727.

A short Account of the *Pulse* and *Urine*, as affording Signs both *Diagnostic* and *Prognostic*; as also of *Crises*, and *critical Days* in *Fevers*, by the Way of *Post-script*.

I Have taken Notice in both my preceding Letters, that as the *Pulse* does guide us to the Nature of the *Fever*, so also to the *Regimen* necessary to be observ'd therein; And that the *Urine*, however fallacious at some times, is yet to be inspected from Day to Day, as affording us often the Signs of *Concoction* of the febrile Matter, by its *Nubes* at the top, the *Eneoræma* suspended, and the *Hypostasis* at the bottom; besides which, when tending to an *Intermittent*, the same is discoverable by the *lateritious* Sediment.



But to give some farther Information of both these, I here present you with a short Abstract, sketch'd out to my Hand, by *Zypæus* from his *Institutions*, a Book now scarce, yet upon several other Accounts deserving your Perusal, as the best, in my Opinion, of the Kind, that has been yet publish'd, with some Annotations of my own.

*And First of the Pulse.*

Which according to this Gentleman is deceitful and mutable, as well from any sudden Motion of the Mind, as of the Body : So that the Physician coming into the sick Man's Chamber, is not presently to explore the same, which may vary even by the Surprise, or Thought how his Case may appear to him.

There are many Differences thereof, some of less Use or Regard : The most material, are the four following : The *Great* and the *Small*, the *Strong* and the *Weak* ; the *Equal* or *Unequal*, the *Frequent* and *Rare*. To

To the first of these belong the *full* and the *empty*, also, in some Respects, the *hard* and the *soft*; the Difference between the *Pulsus magnus, ac validus*, is by some distinguish'd thus.

*Pulsus magnus est, in quo Arteria multum pulsat in longum, latum & profundum. Validus, in quo valide ferit tangentis Digitum.*

The *Ordinate* and *Inordinate*, or the *Equal* and *Unequal*, is the same as the *Intermitting*: That is, when after a certain Number of Vibrations or Stroaks against the Finger, there is a full Stop or Interruption for a short Space; and this is again divided into the *æqualiter inæqualis*, and the *inæqualiter inæqualis*; the former is when the Stop happens constantly after the same Number of Beats, as at 5, at 6, or at 7; the latter, when it falls out sometimes at 3, at others at 9, and so on, irregular still and uncertain.

To the *Inordinate* others (but I think improperly) add the *Caprisans*, *Myurus* and *Formicans*. Some likewise make a

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Dif.

Difference between the *Pulsus celer*, and the *Pulsus frequens*, as betwixt the *tardus* and the *rarus*; alledging that a Pulse may be *swift*, yet not *frequent*; also *frequent*, yet not *swift*; as the Coats of the Artery happen to be more or less dilatable, and require a longer or a shorter time in their striking the Finger: For as in that which is more dilated, the Pulse may be *swift*, yet taking up time to communicate its Motion through the same, less *frequent*: So when the Vessel is more contracted, requiring less Space, it may be *frequent*, yet not *swift*.

According to a late Writer in the *mathematical* Way,<sup>i</sup> there is also a very remarkable one, betwixt a *large* and a *full*, and a *thin* or a *small* Pulse; either of which may be *strong* or *weak*, and by reciprocal Proportion, so balance each other, as to retain the same Magnitude or Quantity of the Stroak in both: That is, the Velocity of the Blood under a

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<sup>i</sup> *Morgan* in his Philosophical Principles.

*large,*



*large, full and weak Pulse*, may be the same as under a *small*, but *strong* and *smart* one ; which depends much on the *contractile power of the Vessels, the state of the Blood, more or less prone to Rarification and Condensation ; its Fluxility or Viscidity, its Heat and specifick Gravity*, which being too weak or strong for the restitutive power of the Nerves, the *Equilibrium* is destroy'd, and *Fevers*, as well as other Disorders, hereby produced ; but passing these, as over nice and less useful Distinctions.

To the *hard* and *soft* Pulse belongs the *full* and the *empty* ; the former incident to old Age, from the indurated Condition of the arterial Coat, which in some have been found Cartilaginous. Related to this, is reckon'd the *Serratus*, tho' surely less properly, which with the acute *Pain on the Side*, and the *dry Cough*, are accounted the usual *Diagnosticks* of the *Pleurisy* ; with the *hard* and the *soft*, are number'd also the *strong* and the *weak*, as above remark'd.

Farthermore, in respect to the *Pulse*, Consideration must be had to the *natural Temperament* or Constitution of the Body, as likewise to the *Age* and *Sex*, the *Passions* of *Anger*, *Joy*, *Sadness*, *Love*; also the *Seasons* of the Year, as *Winter*, *Summer*, *Spring* and *Autumn*, the Temper of the *Air*, as *hot*, *cold*, *moist* and *dry*, all which have an Influence upon the Motion of the Blood, and of Consequence must differently dispose the *Pulse*.

Thus to give you a short Recital, to the *hot* Temper, naturally appertains the *pulsus validus ac frequens*; to the *cold* the contrary, *parvus, tardus ac debilis*; to the *dry*, *duriusculus & rarus*; but if withal *hot*, the *magnus*; to the *humid* or *moist*, the *mollis & rarus, aliquantulum quoque magnus*.

If we regard the *Age*, *Children* have the *Pulsus creber & molliusculus*; *Youth* and *Men* grown, the *maximus ac validissimus*; *Women*, the *creber, mollisque, subinde magnus (ut viraginibus) sed sepius parvus*; *old Age* the *rarus, debilis, sed siccus & duriusculus*. In

In respect to the *Seasons*, to the *Spring* is reckon'd the *magnus, validus & moderatè creber*. To *Summer*, *creber, non-nihil magnus, validusque*, in as much as the Blood at this time is hotter, and more rarify'd. To *Autumn*, *Pulsus inconstans & debilis*, by lessening of the said Heat, together with the frequent change of Air, from one side to the other. To the *Winter*, the *Pulsus parvus, debilior & rarior*. In *Sleep*, the Pulse is more *languid* and *rare*, as also lesser than when awake: And now lastly, if we look to the *Passions*, in *Anger*, the same is *great, strong* and *frequent*; in *Sadness* contrarily, *small, weak* and *rare*. In *Joy*, moderately *large, strong* and withal *equal*. The Pulse proper to Persons in *Love*, is difficultly distinguish'd, as depending much on the different Passions, with which, at diverse Times, these People are affected, as *Joy, Fear, Sorrow*, by which the same is render'd almost perpetually *unequal, fluctuating* or *inconstant*.



*Of the Urine.*

As the Diseases of every part (in the Words of the same Author) are not found out by the *Urine*, so neither (which the *Pis-Prophet* pretends) is every Disease that afflicts the Body of Man. And truly the chief *Indications* we can gather hence, are such which relate principally to the sound or diseased State of those through which the *Serum* of the Blood transmigrates, whence it derives its Generation and Perfection, or wherein it happens to acquire some singular Affection of the *Bowels* inservient to *Concoction*; but in more especial Manner, the *Kidneys*, *Ureters* and *Bladder*; and hence, in some Respects, it may be accounted a more general *Diagnostic* than is the *Pulse*: In as much as the former, not only discovers to us the Disease, but the Cause also, and the Part affected, which the last does not.

Thus from the *Urine*, in reference to the *Disease*, we find out *Wounds*, *Ulcers*,  
Obstruc-

*Obstructions*, with the *Intemperies* of some of the inward Parts; in regard to the *Cause*, some *viscid* and *crude Matter* redundant, *obstructed Bile*, *calculous Concretions* and *Grumes of Blood*. And lastly, as to the *Part affected*, we infer the *Bladder* to be ulcerated, by the *branny Scales* and *stinking Matter*, discharg'd together with the *Urine*. That the *Kidneys* are misaffected, by the *Caruncles*, *Blood* and *Matter*, however less foetid than that from the *Bladder*: Yet usually in larger Quantity, which together with the Pain about the Region of the Loyns, puts the Matter out of Dispute. In *Fevers*, we apprehend the Head, if not as yet, likely to be affected suddenly, by the Change of the *Urine* from a deeper Colour, to a crude Paleness. Thus the *Criticon* has justly remark'd, that if in a *Fever*, *Concoction* appears in the *Urine*, and after turns pale, without a Sediment, provided the same cease, all goes well, otherwise some fatal *Metastasis* (such as a Translocation of the morbid Matter to the Head,

or being thrown upon the Nerves, bringing on Convulsions) is at hand : And hence he says, tho' a *concocted Urine* does not always accompany a *critical* Evacuation or Eruption, yet should it always precede one. None of which are found out by the *Pulse*, which nevertheless it must be granted, is the more sure *Prognosticator* of Life and Death, by indicating the *vital Principle* to be more strong or weak, as the Dispence of the *nervous Fluid*, in the Brain its Store-house, is more vigorously or faintly supply'd for carrying on the Circulation of the Blood, without which, any more than Breathing, we cannot live.

The *Urine* we own does sometimes preface Death, in respect to its entire Stoppage, as in the *Ischury* many Days continued : In the *Ascites* or Dropsy of the Belly, from its small Quantity and lixivial Contents, a Disease almost as fatal ; by the foetid Matter issuing therewith, accompany'd with great Pain in the Discharge, as in the *Ulcers* of the *Bladder* already



already observ'd, usually mortal also at long run: However we are not otherwise to practise *Uromancy*, from Inspection simply of this Fluid, which is so very precarious in *Fevers*, that we find many *Persons* dying with a laudable *Urine*, of which Danger the *Pulse* gives the truer Notice.

If we look upon the Colour of this Liquor, we observe the same Diverse, accordingly as it is more or less saturated with saline and earthy Particles, importing differently also: Thus the insipid made in large Quantity, which is clear like Rock Water, to which they compare it, is common to the *Hysteric* and *Hypochondriacal Affections*. The *sweetish* like hony'd Water, and pale, or rather *Cowslip* colour'd, coming down as it were like a *Cataract* or Flood, withal ponderous as the *Lympha*, denotes the *Diabetic Profluvium* or *Pissing Evil*. On the contrary, the high colour'd and lixivial, as but now observ'd, made also in little Quantity, the *Dropsy* of the Belly. An inflammatory

flammatory Disposition of the Parts within, such as that of the *Intestines*, but especially the *Liver* and *Kidneys*, will dispose the same to be Coffee colour'd, or of a deep red; as the Obstruction of the *Bile*, will render the same yellow, witness the *Jaundice*. A wheyish Water is common to Children labouring under the *Stone* in the *Bladder*, the like I have known accompany the *Worms*, as also to precede the *Small Pox* in Infants.

But as to the Colour and Scent also, many Things may contribute inwardly taken: Thus *Saffron* and *Madder*, as likewise *Turmeric*, but especially *Rhubarb*, will strike a dye thereon of the same Colour, *Asparagus* and rotten *Cheese*, *Garlick* and the *Turpentine*s of all Sorts, will imbue the same with differing Smells; the three first offensive ones, but the last more grateful.

What is most observable in relation to the *Consistence*, are the *clear* and *turbid*; of the former already, the last is often the fore-runner of the three more remarkable

markable *Contents*, to be here observed,

1. The *Nubecula* or Cloud, swimming at the top. 2. *Eneoræma*, which is the same growing more weighty, and falling lower, or hanging as it were in the middle. The 3<sup>d</sup> call'd *Hypostasis*, or *Sedimentum*, growing still heavier, and sinking to the bottom; or taking with you a little touch of *Mathematicks*, you must understand, that Bodies *gravitate* with their Excess of *Gravity*, above the lighter: So that suppose  $x + y$  to be the heavier, and  $x$  to denote the lighter, then  $x + y = y$ . All these with some ramous

Particles holding them together, are compounded of the nutritious *Corpuscles*, carry'd along with the *Serum*, and wash'd off from the Blood in its Passage, according to their several Gravities as now hinted, taking their Stations in the *Urinal*, the lightest keeping on the Surface, the heavier slipping down lower, and the weightiest sinking to the bottom thereof; which ought to be of a *whitish Colour*, *smooth* and *equal*, or according to *Bel-  
lini*,



*lini, figuræ retusæ Pyramidis, cum basi in fundo vasis*, the best Indication of a kindly and regular Concoction : And hence some Physick Writers have remark'd in Fevers, that when towards the fifth, sixth, or seventh Day, this light and even Sediment shews it self in the *Urine*, it is a good Argument of Digestion of the Matter thereof, and a promising Index of Recovery, particularly when the Day before, there was no such Appearance, and that the same is not divuls'd, but close, even, and compact together. Again if on the third Day, the *Nubes* or *Eneoræma* shew themselves, all is to go well, especially when the same begins to gather closer, and has a Tendency downwards, like the true *Hypostasis*.

We have already view'd the other Appearances and Contents in this Fluid, the *Urine*, besides which there is one supernatant in the place of the Cloud at the top, of which we have not taken Notice, that is an *oily* or *fat Appearance*, frequently accompanying the *hectic*

*tical* or consumptive Patient, tho' I have known it common to others, proceeding from the melting down of certain *sulphureous* Parts in the Blood, by a preternatural Heat stirred up; which passing off also with the *Serum*, through the *Papillæ* and *renal Ducts*, from their lightness in Comparison of the others, appear like a Skin or Scum upon the uppermost Part thereof.

*Of Crises, and the Dies Critici in Fevers.*

Altho' it is granted that some Fevers maybe *endemical* to some particular Countries, and that different *Epidemicks* also do arise from some hidden Causes, whether *planetary* above, or *subterraneous* beneath us; yet the *common putrid Fever*, which is owing rather to the manifest Qualities in the Air, or a Trespas in the *Nonnaturals*, must be allow'd, I think, of near Affinity in all Places and Climates; so that as our learned Country-

man Dr. *Freind* in his ix *Commentary*, takes Notice, notwithstanding the Air of *Thasos* where *Hippocrates* practis'd, by its Situation, and particular Disposition, vary'd from that of *England*; yet was not the difference of their *Fevers*, from these of ours, so very wide as some among us are ready to imagine, and indeed those very *Fevers*, which Dr. *Sydenham* has digested as it were into *Constitutions*, or distinct Classes, seem rather, according to this Gentleman, to have been different only in their *Degree*, and attended with some different Appearances, than in the diverse Genius thereof: For as there never was any such where the Sick were in every particular seised alike; So the diverse Symptoms at some times, in one from another, are not sufficient for establishing a new *Genus*, especially where, excepting a regard to those peculiar Symptoms above mention'd, the general Indications are much alike: So needless, or unnecessary is it, saith our Author, to be over-curious in these Distinctions,



stinctions, which are so little instructive to the young Physician, that they may possibly lead him into some Mistake, as falsely suggesting when he sees any singular Note or Property affixed to the Disease, he is also to find out some peculiar Method of Prescription suitable to the same; of which Notice ought to be taken, lest it should be supposed all that has been delivered concerning *Fevers*, by the Divine *Hippocrates*, should be thought foreign to us, or belonging only to a Set of Men, born under another Region, or living in a remote Country from us.

Whether the *Corollaries* which may be hence deduced, for setting on foot the same Cure, will hold good under all Parts of the habitable World, I am not to dispute; but this I may surely affirm among our own *Epidemics* of the same Kind, where an hundred are seized about the same Time, we meet not with five in every particular Complaint alike; for as Mens various Constitutions and ways of Living, dispose the Humours in their Blood,

to be diversly affected, even under the same *Constitution* of the *Atmosphere*, or whatever secret Cause shall give rise to the reigning Disease; so it is less Wonder the Appearances of some Symptoms should be diversify'd.

This premis'd, I come now to speak a few Words of the *Crisis* and the *critical Days*, whereon the Antients laid very great Stress, but which, in a Manner, is wholly neglected by us, who observe that *Fevers* of all Kinds run their Stages, without any Regard to Numbers of Days, unless that they do not often extend beyond twenty one; I say, not often, for we want not Instances of such as have exceeded thirty one: But as to the finishing their *Despumation*, or what is call'd *Concoction*, precisely on such a Day, as the 5, 7, 11, 14 or 21, there is, I say, no Rule that holds with us, who observe, as the Sick is feis'd at all Times and Seasons, so dies he, or shews Signs of Recovery, on the Days intermediate, or between all these;  
and

and hence we justly, I think, have set at naught the *dies Indices, indicantes seu contemplabiles*, such as the 4, 11, 17, and 24; the *Intercidentes*, call'd otherwise *intercalares*, which were the 3, 5, 9, the 13 and 19, the *Vacui, viz.* 6, 8, 10, 12, 16, 18; and which others have run up to 39, whilst our People make them all *Medicinales*, and in that respect, *pleni*, whether for the better at all Times, or not the worse at some, I shall leave the Faculty to determine; but doubtless it may furnish out some Reason why these *Crises* are less certain with us, than they were among the Antients; for Nature, as *Baglivi* observes, being the best Curer of Diseases, the Physician is to stand by, not as an idle Spectator, but to assist as he sees Occasion, or as the Symptoms happen to indicate: And this was the Method of *Hippocrates*, who gave few Medicines at the Beginning, and at the Height none at all, provided the Fever was not attended with any perverse or malign

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Symptom, requiring something farther to be done.

By this, the Disease came to its natural *Crisis* or Termination, at the usual and stated Period appointed by Nature, which, perhaps, may be inverted and render'd confus'd, where over-officious *Art* intrudes and puts by the same.

‘ You can’t imagine (saith this considerate Man) what Pleasure I have had, after the Pursuit of this Method, and seeing the febrile Fits succeed by gentle and friendly Turns, running their Rounds in the appointed Order of Nature; In seeing, I say, the regular and finish’d Course, the *Crises* or Depuration of each Fit, as well as the general Despumation at the End of the Disease.

‘ On the other Hand, when she was teased and thwarted with the continual Use of Remedies (those too perhaps ill suited, as well as timed) I always observ’d (*væ vobis Medicis!* shall I say now?) that every Thing grew worse,

\* worse, and I can safely say, that I have  
 \* oftentimes cur'd *inflammatory Fevers*,  
 \* especially those accompanying the *Small*  
 \* *Pox*, by *Bleeding*, a *thin Diet*, and  
 \* *diluting Remedies*, and pursuing this  
 \* Method, never had a Patient died un-  
 \* der my Hands.

Oh happy *Baglivi*! or surely these Fe-  
 vers at *Rome* have been more mild and  
 kindly than ours at *London*, where, tho'  
 I own, among the poorer Sort, who have  
 pursued the simple *cooling Regimen* of  
 thin Gruels prepared either with Oat-  
 meal or Barley, I have observ'd the same,  
 but not always the like Success; nor  
 among any of these afflicted with the  
 same Fever, could I ever fix the *Crisis* to  
 the same Day, or thought it reasonable  
 to expect it: For altho' *vegetable Juices*  
 from the same Plants, and of the same  
 Growth or Maturity, put into Vessels,  
 and set to ferment under the same De-  
 gree of Heat and Cold, may happen to  
 fine or be despum'd, the Effervescence  
 ceasing at their limited Time or Period;

yet will not, 'nor can it be supposed the Blood of divers Men, living differently, and of divers Temperaments, should be subjected to the same stated Number of Days, under its *Ebullition* or *Fermentation*.

Thus *Lommius* discoursing of the *Concoction* of the feverish Matter, acquaints us, *that if any Sign thereof appear'd on the fourth Day, about Greece and Italy, the Disease was judged, that is, terminated on the seventh, but with us, saith he, (Gueldria Batavica) upon the ninth; and in the continual Fever remitting, or so intermitting, as having one Day better than another, the same will not conclude before the eleventh: But notwithstanding this Difference of Appearance one Day from the other, altho' the Force of the Disease seemeth to be overcome, at the Time of such Remission or Intermision either, yet if there arise any ill Symptom between, it may not possibly be judg'd till the fourteenth, the common Boundary of these acute Diseases, altho'*  
it



*it may happen they may extend to 20, 30, or 40.*

From all which I think it appears plain, how little Certainty there is in those Days, which are called *Critical*; and that altho' the Blood of one, under this State of a feverish Ebullition, may cease its *Luētus*, and regain its Temper by the seventh Day, yet that of another, under the like *Effervescence*, may not recover its pristine Calm, till the eleventh or the fourteenth, the Signs of whose Approach are aptly enough drawn up by an Author we have formerly quoted upon some other Occasions, *viz.* a *sensible Diminution of the Heat and Burning, with an agreeable Moisture, as well on the Tongue as the Skin in general, succeeding in its Place, the Urine changing from the more to the less inflammatory Colour, or from that of crude to a concocted State, as is seen by its Light and equal Sediment; easy, gentle Sweats, kindly Evacuation also by Stool, as in the Time of Health; the Pulse regular,*  
*imitating*

*imitating almost the Natural; and lastly, if the Fever assumes that Shape, periodical Intermissions, at least regular Remissions, where before the same was continual, irregular, and had imperfect or indistinct Intervals.*

And this is what I have thought necessary to communicate farther about the State of Fevers in general, and the Time of what they call the *Crisis*, when the utmost Care is requir'd, that instead of forwarding we do not someway retard or pervert the same, or change what might have proved *salutary* into a *fatal* one; in regard to which I cannot better shut up this Discourse, than in these Words of the same excellent Author *Lommius*.

*Omnibus, ita uti præcepi, diligenter per Febris Principium & Incrementum, provisus: ubi ad Statum ventum est, videre imprimis oportet, quibus Natura viis, corruptum humorem pellere instituat: Eamque convenit parum firmam juvare, neque vero reclamation quod Hippocrates scribit*  
*quæ*

*quæ judicantur aut judicata sunt integre, ea nullis Medicamentis alijsve irritationibus laceſſenda, ſed ſinenda eſſe: (Scil.) hic non laceſſimus, ſed quo Natura vergit, eo leniter impellimus, laborantique Naturæ, tanquam Manus auxiliatrices damus, rebus uſi Moderationibus, nec quicquam Naturæ opus, more purgantium medicamentorum turbantibus; ut enim Natura recte omnia per ſe abſolventem attingere, neceſſe non eſt: ita fas eſt laborantem Conatuque vacuantem difficiliore, adjuvare. &c.*

FINIS.

ERRATA.

**P**Age 31. under the literal reference at the bottom for *apud non*, read *apud nos*. p. 58. line 18. for *is* r. *are*. p. 60. l. 6. r. *conflict*. p. 64. *linea ultima*, r. *it was not*. p. 144. l. ult. for *now*, r. *and*. p. 159. for *Operations*, r. *Observations*. p. 160. l. 6. r. *conſider'd*. p. 170. l. 22. for *ſecretus* r. *inſecutus*. p. 209. l. 14. r. *worthy*. p. 240. l. 18. r. *thus ſeiſed*. p. 253. l. 15. r. *of*. p. 316. l. 17. *ſcilicet*, r. *ſcilicet*. p. 344. l. 16. dele *theſe*.



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